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DICTIONARY FILE UPDATES: 17 JAN 2006 HIGHEST RN 872085-61-5

New CAS Information Use Policies, enter HELP USAGETERMS for details.

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*

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=> FILE HCAPLU

FILE 'HCAPLUS' ENTERED AT 15:42:46 ON 19 JAN 2006

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FILE COVERS 1907 - 19 Jan 2006 VOL 144 ISS 4

FILE LAST UPDATED: 18 Jan 2006 (20060118/ED)

New CAS Information Use Policies, enter HELP USAGETERMS for details.

This file contains CAS Registry Numbers for easy and accurate substance identification.

=> D QUE L57

L1 104778 SEA FILE=REGISTRY ABB=ON 333.401.37/RID

L3 278931 SEA FILE=REGISTRY ABB=ON 16.165.12/RID

L4 301680 SEA FILE=REGISTRY ABB=ON 16.195.24/RID

L5 *with the one indol* 545041 SEA FILE=REGISTRY ABB=ON 333.151.57/RID

L6 235490 SEA FILE=REGISTRY ABB=ON 16.195.22/RID

L7 107403 SEA FILE=REGISTRY ABB=ON 333.401.35/RID

L8 30485 SEA FILE=REGISTRY ABB=ON 16.515.22/RID

L10 4887 SEA FILE=REGISTRY ABB=ON 16.213.13/RID

L11 301680 SEA FILE=REGISTRY ABB=ON L4 OR L4

L12 156421 SEA FILE=REGISTRY RAN=(,357260-15-2) ABB=ON L4 OR L4

L13 145259 SEA FILE=REGISTRY ABB=ON L11 NOT L12

L14 48372 SEA FILE=HCAPLUS ABB=ON L1

L15 44086 SEA FILE=HCAPLUS ABB=ON L3

L16 80707 SEA FILE=HCAPLUS ABB=ON L6

L17 14186 SEA FILE=HCAPLUS ABB=ON L7

L18 15367 SEA FILE=HCAPLUS ABB=ON L8

L19 2437 SEA FILE=HCAPLUS ABB=ON L10

L20 199118 SEA FILE=HCAPLUS ABB=ON L12

L21 17892 SEA FILE=HCAPLUS ABB=ON L13

L22 1087 SEA FILE=HCAPLUS ABB=ON ((L14 OR L15 OR L16 OR L17 OR L18 OR L19 OR L20 OR L21)) (L) ELECTRODE?

L23 7860 SEA FILE=REGISTRY ABB=ON (L1 OR L3 OR L4 OR L6 OR L7 OR L8 OR L10) AND PMS/CI

L24 1 SEA FILE=REGISTRY ABB=ON POLYANILINE/CN

L25 1 SEA FILE=REGISTRY ABB=ON POLYPYRROLE/CN

L26 1 SEA FILE=REGISTRY ABB=ON POLYACETYLENE/CN

L27 743 SEA FILE=REGISTRY ABB=ON PPH/PCT

L28 1 SEA FILE=REGISTRY ABB=ON POLYFURAN/CN

L29 0 SEA FILE=REGISTRY ABB=ON POLYFLURANE

L30 0 SEA FILE=REGISTRY ABB=ON POLYFLOURENE/CN

L31 1 SEA FILE=REGISTRY ABB=ON POLYFLUORENE/CN

L32 1 SEA FILE=REGISTRY ABB=ON POLYTHIENYLENE/CN

L33 1 SEA FILE=REGISTRY ABB=ON POLYPYRIDINE/CN

L34 1 SEA FILE=REGISTRY ABB=ON POLYISOTHIANAPHTHENE/CN

L37 402492 SEA FILE=REGISTRY ABB=ON 46.195.39/RID

L38 1169 SEA FILE=REGISTRY ABB=ON L37 AND PMS/CI

L39 1 SEA FILE=REGISTRY ABB=ON POLYINDOLE/CN

L41 155 SEA FILE=REGISTRY ABB=ON POLY(L) AMINO(L) ANTHRAQUINONE

L42 923 SEA FILE=REGISTRY ABB=ON L5 AND PMS/CI

L43 1 SEA FILE=REGISTRY ABB=ON POLYANTHRAQUINONE/CN

L44 1 SEA FILE=REGISTRY ABB=ON POLYBENZOQUINONE/CN

L45 1 SEA FILE=REGISTRY ABB=ON POLYNAPHTHALENE/CN

L46 3000 SEA FILE=REGISTRY ABB=ON (L24 OR L25 OR L26 OR L27 OR L28 OR L29 OR L30 OR L31 OR L32 OR L33 OR L34) OR L38 OR L39 OR (L41 OR L42 OR L43 OR L44 OR L45)

L47 6880 SEA FILE=HCAPLUS ABB=ON L23

L48 106 SEA FILE=HCAPLUS ABB=ON L47(L) ELECTRODE?

L49 28917 SEA FILE=HCAPLUS ABB=ON L46

L51 2667 SEA FILE=HCAPLUS ABB=ON L49(L) ELECTRODE?

L52 25 SEA FILE=HCAPLUS ABB=ON (L22 OR L48) AND L51

L53 7248 SEA FILE=HCAPLUS ABB=ON (POLYANILINE? OR POLYTHIOPHENE? OR INDOLE TRIMER? OR POLYINDOL? OR POLYPYRROLE? OR POLYACETYLENE? OR POLYPHENYLENE? OR POLYFURAN? OR POLYNAPHTHALEN? OR POLYFLUOR EN? OR POLYPYRIDIN?) (L) ELECTRODE?

L54 199 SEA FILE=HCAPLUS ABB=ON (POLYTHIENYL? OR POLYPYRIMIDIN? OR POLYINDOL? OR POLYISOTHIANAPHTH? OR POLYQUINOXALIN? OR

ring identifiers
for imidazoles
triazoles
pyrazoles &
benzimidazole

proton conducting
other components
p 2 of
spec's

p 2
spec's

POLYPYRIDIN? OR POLYPYRIMIDIN? OR POLYAMINOANTHRAQUIN?) (L) ELECTRODE?
L55 5 SEA FILE=HCAPLUS ABB=ON (POLYANTHRAQUINON? OR POLYBENZOQUINON?) (L) ELECTRODE?
L56 32 SEA FILE=HCAPLUS ABB=ON (L22 OR L48) AND ((L53 OR L54 OR L55))
L57 33 SEA FILE=HCAPLUS ABB=ON L52 OR L56

=> D L57 BIB ABS HITIND HITSTR 1-33

L57 ANSWER 1 OF 33 HCAPLUS COPYRIGHT 2006 ACS on STN
AN 2005:1331156 HCAPLUS
DN 144:54460
TI Fuel cells using gas diffusion electrodes
PA Sartorius AG, Germany
SO Ger. Gebrauchsmusterschrift, 12 pp.
CODEN: GGXXFR
DT Patent
LA German
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	DE 202005010403	U1	20051222	DE 2005-202005010403	20050702
PRAI	DE 2004-102004032999	IA	20040708		

AB Gas diffusion electrodes with several gas-permeable, elec. conductive layers, which consist at least of a gas diffusion layer and a catalyst layer, whereby the catalyst layer contains at least particles of an elec. conductive substrate, and at least one part of the particles carries an electrocatalyst and/or at least partly loaded with ≥ 1 porous proton-conductive polymer, and this proton-conductive polymer is applicable at temps. to above the b.p. of water.

ICM H01M004-86

ICS H01M004-64; H01M004-88; H01M004-92; H01M008-02

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 38

IT **Polyquinoxalines**

RL: DEV (Device component use); USES (Uses)
(fuel cells using gas diffusion electrodes)

IT 127-19-5, Dimethyl acetamide 129-00-0D, Pyrene, aza derivs., polymers
7440-44-0, Carbon, uses 25013-01-8, Polypyridine
82370-43-2, Polyimidazole 128611-69-8 190201-51-5

RL: DEV (Device component use); USES (Uses)
(fuel cells using gas diffusion electrodes)

IT 25013-01-8, Polypyridine 82370-43-2,
Polyimidazole 190201-51-5

RL: DEV (Device component use); USES (Uses)
(fuel cells using gas diffusion electrodes)

RN 25013-01-8 HCAPLUS

CN Pyridine, homopolymer (9CI) (CA INDEX NAME)

CM 1

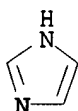
CRN 110-86-1

CMF C5 H5 N

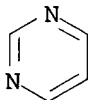
33 CA references on electrodes with both types of compounds



RN 82370-43-2 HCAPLUS
CN 1H-Imidazole, homopolymer (9CI) (CA INDEX NAME)
CM 1
CRN 288-32-4
CMF C3 H4 N2



RN 190201-51-5 HCAPLUS
CN Pyrimidine, homopolymer (9CI) (CA INDEX NAME)
CM 1
CRN 289-95-2
CMF C4 H4 N2



L57 ANSWER 2 OF 33 HCAPLUS COPYRIGHT 2006 ACS on STN
AN 2005:1197806 HCAPLUS
DN 143:449134
TI Reversible electrodeposition optical modulation device with conducting
polymer counter electrode
IN Warren, Leslie F.; Tench, D. Morgan
PA Rockwell Scientific Licensing, LLC, USA
SO U.S. Pat. Appl. Publ., 11 pp.
CODEN: USXXCO
DT Patent
LA English
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 2005248825	A1	20051110	US 2004-839060	20040504
PRAI	US 2004-839060		20040504		

AB Optical modulation devices for controlling the propagation of
electromagnetic radiation are described which comprise an optical
modulation electrode that is substantially transparent to the radiation; a
counter electrode comprising a layer of a conducting polymer; and an
electrolyte containing a complexing anion and ions of an electrodepositable
metal, the electrolyte being disposed between and in elec. contact with

the optical modulation electrode and the counter electrode, whereby the electrodepositable metal is reversibly electrodeposited on the optical modulation electrode so as to affect propagation of the electromagnetic radiation. The conducting polymer counter electrode does not generate mobile reactive species, and avoids the light blocking associated with grid or dot matrix electrodes involving reversible metal electrodeposition. Application to smart windows is indicated.

IC ICM G02F001-15

INCL 359265000

CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

Section cross-reference(s): 52, 72

IT **Polyanilines**

RL: DEV (Device component use); USES (Uses)

(**electrodes; reversible electrodeposition optical modulation devices with conducting polymer counter electrodes**)

IT 1306-19-0, Cadmium oxide, uses 7439-88-5, Iridium, uses 7440-04-2, Osmium, uses 7440-05-3, Palladium, uses 7440-06-4, Platinum, uses 7440-15-5, Rhenium, uses 7440-16-6, Rhodium, uses 7440-18-8, Ruthenium, uses 7440-57-5, Gold, uses 25233-30-1, **Polyaniline 25233-30-1D, Polyaniline, derivs.**

25233-34-5, Polythiophene 25233-34-5D, Polythiophene

, derivs. 30604-81-0, Polypyrrole 30604-81-0D

, Polypyrrole, derivs. 50926-11-9, Indium tin oxide

117944-65-7, Indium zinc oxide

RL: DEV (Device component use); USES (Uses)

(**electrodes; reversible electrodeposition optical modulation devices with conducting polymer counter electrodes**)

IT 7439-92-1, Lead, uses 7439-97-6, Mercury, uses 7440-22-4, Silver, uses 7440-28-0, Thallium, uses 7440-31-5, Tin, uses 7440-36-0, Antimony, uses 7440-43-9, Cadmium, uses 7440-50-8, Copper, uses 7440-66-6, Zinc, uses 7440-69-9, Bismuth, uses 7440-74-6, Indium, uses 7783-90-6, Silver chloride, uses 65039-09-0 479500-35-1

RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); RCT (Reactant); TEM (Technical or engineered material use); PROC (Process); RACT (Reactant or reagent); USES (Uses)

(**reversible electrodeposition optical modulation devices with conducting polymer counter electrodes**)

IT **25233-30-1, Polyaniline 25233-30-1D, Polyaniline, derivs. 30604-81-0, Polypyrrole 30604-81-0D, Polypyrrole, derivs.**

RL: DEV (Device component use); USES (Uses)

(**electrodes; reversible electrodeposition optical modulation devices with conducting polymer counter electrodes**)

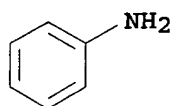
RN 25233-30-1 HCAPLUS

CN Benzenamine, homopolymer (9CI) (CA INDEX NAME)

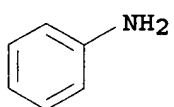
CM 1

CRN 62-53-3

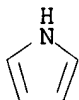
CMF C6 H7 N



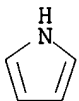
RN 25233-30-1 HCAPLUS
CN Benzenamine, homopolymer (9CI) (CA INDEX NAME)
CM 1
CRN 62-53-3
CMF C6 H7 N



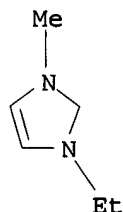
RN 30604-81-0 HCAPLUS
CN 1H-Pyrrole, homopolymer (9CI) (CA INDEX NAME)
CM 1
CRN 109-97-7
CMF C4 H5 N



RN 30604-81-0 HCAPLUS
CN 1H-Pyrrole, homopolymer (9CI) (CA INDEX NAME)
CM 1
CRN 109-97-7
CMF C4 H5 N



IT 65039-09-0
RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); RCT (Reactant); TEM (Technical or engineered material use); PROC (Process); RACT (Reactant or reagent); USES (Uses)
(reversible electrodeposition optical modulation devices with conducting polymer counter electrodes)
RN 65039-09-0 HCAPLUS
CN 1H-Imidazolium, 1-ethyl-3-methyl-, chloride (9CI) (CA INDEX NAME)



● Cl⁻

ONE OR MORE TAUTOMERIC DOUBLE BONDS NOT DISPLAYED IN THE STRUCTURE

L57 ANSWER 3 OF 33 HCAPLUS COPYRIGHT 2006 ACS on STN

AN 2005:1173920 HCAPLUS

DN 143:443509

TI Dye-sensitized solar cells employing carbon nanomaterials in counter electrodes of photoelectrodes

IN Kubo, Kazuki; Nakao, Yukiyasu; Nobutoki, Eiji

PA Mitsubishi Electric Corp., Japan

SO Jpn. Kokai Tokkyo Koho, 17 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2005310722	A2	20051104	JP 2004-130137	20040426
PRAI	JP 2004-130137		20040426		

AB The solar cells comprise dye-carrying semiconductor photoelectrodes, (solid/gelated) charge-transfer electrolyte layers, and counter electrodes comprising electrode layers containing carbon nanomaterials carrying catalysts. The nanomaterials may be carbon nanohorns or nanocones. The solar cells achieve high energy conversion efficiency.

IC ICM H01M014-00

ICS H01L031-04

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)

IT 7553-56-2, Iodine, uses 7791-03-9, Lithium perchlorate 10377-51-2, Lithium iodide 218151-78-1

RL: DEV (Device component use); USES (Uses)

(electrolyte component; dye-sensitized solar cell employing catalyst-carrying carbon nanomaterials in counter electrode of photoelectrode)

IT 30604-81-0P, Polypyrrole

RL: DEV (Device component use); IMF (Industrial manufacture); PREP (Preparation); USES (Uses)

(electrolyte component; dye-sensitized solar cell employing catalyst-carrying carbon nanomaterials in counter electrode of photoelectrode)

IT 25322-68-3, Polyethylene glycol 178631-05-5, 1-Methyl-3-hexylimidazolium iodide

RL: DEV (Device component use); MOA (Modifier or additive use); USES (Uses)

(gelating agent, electrolyte component; dye-sensitized solar cell employing catalyst-carrying carbon nanomaterials in counter

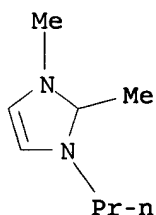
electrode of photoelectrode)

IT 218151-78-1

RL: DEV (Device component use); USES (Uses)
 (electrolyte component; dye-sensitized solar cell employing
 catalyst-carrying carbon nanomaterials in counter electrode
 of photoelectrode)

RN 218151-78-1 HCAPLUS

CN 1H-Imidazolium, 1,2-dimethyl-3-propyl-, iodide (9CI) (CA INDEX NAME)

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ONE OR MORE TAUTOMERIC DOUBLE BONDS NOT DISPLAYED IN THE STRUCTURE

IT 30604-81-0P, Polypyrrole

RL: DEV (Device component use); IMF (Industrial manufacture); PREP
 (Preparation); USES (Uses)
 (electrolyte component; dye-sensitized solar cell employing
 catalyst-carrying carbon nanomaterials in counter electrode
 of photoelectrode)

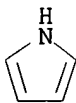
RN 30604-81-0 HCAPLUS

CN 1H-Pyrrole, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 109-97-7

CMF C4 H5 N



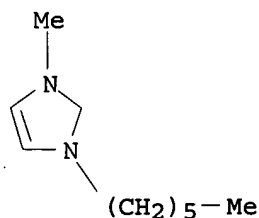
IT 178631-05-5, 1-Methyl-3-hexylimidazolium iodide

RL: DEV (Device component use); MOA (Modifier or additive use); USES
 (Uses)

(gelating agent, electrolyte component; dye-sensitized solar cell
 employing catalyst-carrying carbon nanomaterials in counter
 electrode of photoelectrode)

RN 178631-05-5 HCAPLUS

CN 1H-Imidazolium, 1-hexyl-3-methyl-, iodide (9CI) (CA INDEX NAME)



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ONE OR MORE TAUTOMERIC DOUBLE BONDS NOT DISPLAYED IN THE STRUCTURE

L57 ANSWER 4 OF 33 HCAPLUS COPYRIGHT 2006 ACS on STN

AN 2005:962573 HCAPLUS

DN 143:251017

TI High-performance membrane electrode unit for use in fuel cells

IN Schmidt, Thomas; Uensal, Oemer; Weber, Mathias; Kundler, Isabel;
Calundann, Gordon; Baurmeister, Jochen

PA Pemeas G.m.b.H., Germany

SO PCT Int. Appl., 45 pp.

CODEN: PIXXD2

DT Patent

LA German

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2005081351	A2	20050901	WO 2005-EP1761	20050220
	W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				

DE 102004008628 A1 20050908 DE 2004-102004008628 20040221

PRAI DE 2004-102004008628 A 20040221

AB The invention relates to a membrane electrode unit comprising a polymer membrane doped with a mineral acid, and two electrodes, the unit being characterized in that the polymer membrane comprises at least one polymer containing at least one nitrogen atom, and at least one electrode comprises a catalyst formed from at least one precious metal and at least one base metal according to the electrochem. series.

IC ICM H01M008-10

ICS H01M004-86; H01M004-88; H01M004-92

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)

Section cross-reference(s): 38

IT Polyquinoxalines

RL: DEV (Device component use); USES (Uses)

(high-performance membrane electrode unit for use in fuel cells)

IT 91-95-2, 3,3',4,4'-Tetraaminobiphenyl 463-79-6D, Carbonic acid, diamino

derivative, aromatic and/or heteroarom. compound 463-79-6D, Carbonic acid, heteroarom. compound 3204-61-3, 1,2,4,5-Tetraaminobenzene 9010-39-3, Polytriazole 25013-01-8, Polypyridine 25734-65-0, Poly(2,2'-m-phenylene)-5,5'-bisbenzimidazole 38926-45-3, 2,3,5,6-Tetraaminopyridine 82370-43-2, Polyimidazole 105809-46-9, Polypyrazole 128611-69-8 190201-51-5 850811-17-5 863495-63-0

RL: DEV (Device component use); USES (Uses)

(high-performance membrane electrode unit for use in fuel cells)

IT 88-99-3, Phthalic acid, uses 89-05-4, 1,2,4,5-Benzenetetracarboxylic acid 99-31-0, 5-Aminoisophthalic acid 100-21-0, Terephthalic acid, uses 100-31-2, 4,4'-Stilbenedicarboxylic acid 121-91-5, Isophthalic acid, uses 122-05-4, 2,5-Pyrazinedicarboxylic acid 126-00-1, Diphenolic acid 128-97-2, 1,4,5,8-Naphthalenetetracarboxylic acid 499-80-9, 2,4-Pyridinedicarboxylic acid 499-81-0, 3,5-Pyridinedicarboxylic acid 499-83-2, 2,6-Pyridinedicarboxylic acid 528-44-9, Trimellitic acid 536-20-9, 2,4,6-Pyridinetricarboxylic acid 554-95-0, Trimesic acid 605-70-9, 1,4-Naphthalenedicarboxylic acid 610-92-4, 2,5-Dihydroxyterephthalic acid 618-83-7, 5-Hydroxyisophthalic acid 636-46-4, 4-Hydroxyisophthalic acid 636-94-2, 2-Hydroxyterephthalic acid 652-03-9, Tetrafluorophthalic acid 652-36-8, Tetrafluoroterephthalic acid 787-70-2, Biphenyl-4,4'-dicarboxylic acid 835-58-5, 4-TriFluoromethylphthalic acid 964-68-1, Benzophenone-4,4'-dicarboxylic acid 1141-38-4, 2,6-Naphthalenedicarboxylic acid 1147-65-5, (2-Carboxyphenyl)iminodiacetic acid 1171-47-7, 2,2-Bis(4-carboxyphenyl)hexafluoropropane 1551-39-9, Tetrafluoroisophthalic acid 1583-66-0, 5-Fluoroisophthalic acid 1583-67-1, 3-Fluorophthalic acid 2089-89-6, 2,7-Naphthalenedicarboxylic acid 2215-89-6, Diphenyl ether-4,4'-dicarboxylic acid 2449-35-6, Diphenylsulfone-4,4'-dicarboxylic acid 2479-49-4, Benzophenonetetracarboxylic acid 3112-31-0, 3,5-Pyrazoledicarboxylic acid 3906-87-4 4371-28-2, 3,5,3',5'-Biphenyltetracarboxylic acid 4861-72-7, 5-N,N-Dimethylaminoisophthalic acid 5167-76-0 7315-96-0, 1,5-Naphthalenedicarboxylic acid 10351-75-4, Benzimidazole-5,6-dicarboxylic acid 19675-63-9, 4-Carboxycinnamic acid 22803-05-0, 3,3',4,4'-Biphenyltetracarboxylic acid 22928-28-5 36966-22-0 37645-41-3, 2,4-Pyrimidinedicarboxylic acid 39155-64-1, 1,2,5,6-Naphthalenetetracarboxylic acid 59195-28-7 82784-82-5, 3,4-Dihydroxyphthalic acid 603993-70-0 677010-19-4, 5-N,N-Diethylaminoisophthalic acid 677010-20-7 863495-62-9

RL: TEM (Technical or engineered material use); USES (Uses)

(high-performance membrane electrode unit for use in fuel cells)

IT 25013-01-8, Polypyridine 25734-65-0, Poly(2,2'-m-phenylene)-5,5'-bisbenzimidazole 82370-43-2, Polyimidazole 105809-46-9, Polypyrazole 190201-51-5 863495-63-0

RL: DEV (Device component use); USES (Uses)

(high-performance membrane electrode unit for use in fuel cells)

RN 25013-01-8 HCAPLUS

CN Pyridine, homopolymer (9CI) (CA INDEX NAME)

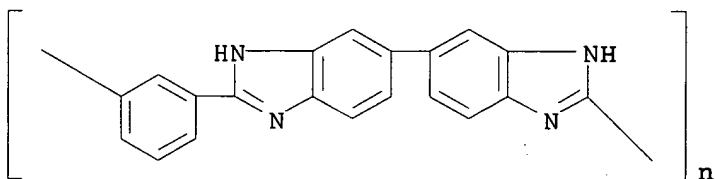
CM 1

CRN 110-86-1

CMF C5 H5 N



RN 25734-65-0 HCAPLUS
CN Poly([5,5'-bi-1H-benzimidazole]-2,2'-diyl-1,3-phenylene) (9CI) (CA INDEX NAME)

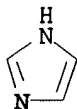


RN 82370-43-2 HCAPLUS
CN 1H-Imidazole, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 288-32-4

CMF C3 H4 N2

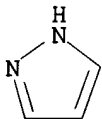


RN 105809-46-9 HCAPLUS
CN 1H-Pyrazole, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 288-13-1

CMF C3 H4 N2

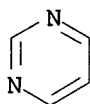


RN 190201-51-5 HCAPLUS
CN Pyrimidine, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 289-95-2

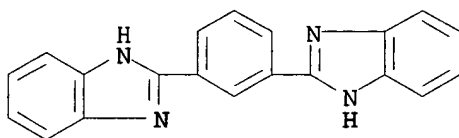
CMF C4 H4 N2



RN 863495-63-0 HCAPLUS
 CN 1H-Benzimidazole, 2,2'-(1,3-phenylene)bis-, polymer with
 2,2'-(2,5-pyridinediyl)bis[1H-benzimidazole] (9CI) (CA INDEX NAME)

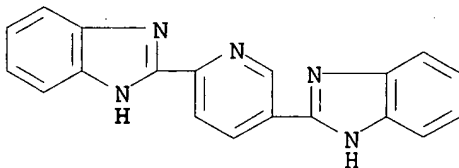
CM 1

CRN 29914-81-6
 CMF C20 H14 N4



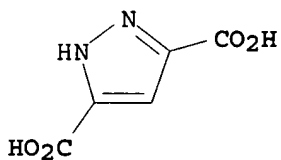
CM 2

CRN 19517-07-8
 CMF C19 H13 N5

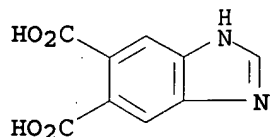


IT 3112-31-0, 3,5-Pyrazoledicarboxylic acid 10351-75-4,
 Benzimidazole-5,6-dicarboxylic acid
 RL: TEM (Technical or engineered material use); USES (Uses)
 (high-performance membrane electrode unit for use in fuel
 cells)

RN 3112-31-0 HCAPLUS
 CN 1H-Pyrazole-3,5-dicarboxylic acid (9CI) (CA INDEX NAME)



RN 10351-75-4 HCAPLUS
 CN 1H-Benzimidazole-5,6-dicarboxylic acid (9CI) (CA INDEX NAME)



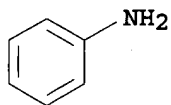
L57 ANSWER 5 OF 33 HCAPLUS COPYRIGHT 2006 ACS on STN
 AN 2005:812448 HCAPLUS
 DN 143:349813
 TI Hybrid materials approach in the design of electrodes and electrolytes for energy storage and conversion
 AU Cuentas-Gallegos, Karina; Lira-Cantu, Monica; Casan-Pastor, Nieves; Asensio, Juan A.; Gomez-Romero, Pedro
 CS Materials Science Institute of Barcelona (CSIC), Bellaterra, 08193, Spain
 SO Materials Research Society Symposium Proceedings (2005), Volume Date 2004, 847(Organic/Inorganic Hybrid Materials--2004), 431-438
 CODEN: MRSPDH; ISSN: 0272-9172
 PB Materials Research Society
 DT Journal; General Review
 LA English
 AB A review. The integration of electro-ionically active inorg. species in polymer matrixes allows for the design of either electrode or electrolyte materials depending on the conducting or insulating properties of the polymer used. Conducting polymers can be used as the basis for a variety of hybrid electrode systems, whereas other polymers such as polybenzimidazoles were used as electrolyte membranes by themselves or in combination with inorg. solid acids. The authors will discuss the general approach of hybrid design with this in mind and specifically the authors will describe the recent results on the use of polyoxometalate-containing hybrids in energy storage and conversion devices. In this respect the authors have worked in the laboratory on electrochem. supercapacitors and fuel cells but emphasis should be made on the broader potential fields of application of this type of materials.
 CC 52-0 (Electrochemical, Radiational, and Thermal Energy Technology)
 IT 25233-30-1P, Polyaniline
 RL: DEV (Device component use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
 (blend with phosphomolybdic acid; hybrid materials approach in design of **electrodes** and electrolytes for energy storage and conversion)
 IT 32109-42-5P, Poly(2,5-benzimidazole)
 RL: DEV (Device component use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
 (composite with polyphosphoric acid, phosphoric acid-doped; hybrid materials approach in design of **electrodes** and electrolytes for energy storage and conversion)
 IT 12026-57-2, Phosphomolybdic acid (H3PMo12O40)
 RL: DEV (Device component use); USES (Uses)
 (composites with **polyaniline**; hybrid materials approach in design of **electrodes** and electrolytes for energy storage and conversion)
 IT 25233-30-1P, Polyaniline
 RL: DEV (Device component use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
 (blend with phosphomolybdic acid; hybrid materials approach in design of **electrodes** and electrolytes for energy storage and conversion)
 RN 25233-30-1 HCAPLUS

CN Benzenamine, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 62-53-3

CMF C6 H7 N



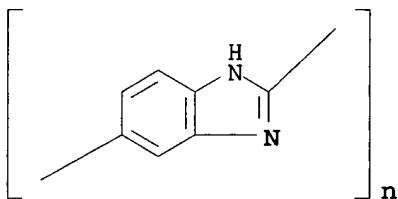
IT 32109-42-5P, Poly(2,5-benzimidazole)

RL: DEV (Device component use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)

(composite with polyphosphoric acid, phosphoric acid-doped; hybrid materials approach in design of electrodes and electrolytes for energy storage and conversion)

RN 32109-42-5 HCAPLUS

CN Poly(1H-benzimidazole-2,5-diyl) (9CI) (CA INDEX NAME)

RE.CNT 14 THERE ARE 14 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L57 ANSWER 6 OF 33 HCAPLUS COPYRIGHT 2006 ACS on STN

AN 2005:612368 HCAPLUS

DN 143:116542

TI Proton-conducting membranes based on polyazoles and use thereof

IN Uensal, Oemer; Leister, Ursula; Schlegel, Melanie

PA Pemeas G.m.b.H., Germany

SO PCT Int. Appl., 49 pp.

CODEN: PIXXD2

DT Patent

LA German

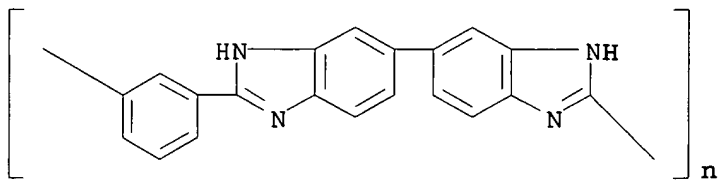
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2005063852	A1	20050714	WO 2004-EP14831	20041230
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML,				

MR, NE, SN, TD, TG
DE 10361833 A1 20050804 DE 2003-10361833 20031230
PRAI DE 2003-10361833 A 20031230
OS MARPAT 143:116542
AB Proton-conducting membranes based on polyazoles optionally having heterocyclic side chains with increased conductivity and decreased flash over for fuel cells are manufactured by dissolving or dispersing ≥ 1 aromatic tetramine and ≥ 1 aromatic carboxylic acid or ester having ≥ 2 carboxylic acid groups or a mixture of ≥ 1 aromatic and(or) heterocyclic diaminocarboxylic acids in organic phosphonic acid anhydrides, coating the dispersion or solution on a support or an electrode, and heating at $\leq 350^\circ$.
IC ICM C08G073-18
ICS B01D067-00; B01D071-64
CC 38-3 (Plastics Fabrication and Uses)
Section cross-reference(s): 52
IT Polybenzimidazoles
Polybenzoxazoles
Polyoxadiazoles
Polyquinoxalines
RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
(proton-conducting membranes based on polyazoles prepared from solns. of monomers in phosphonic acid anhydrides on supports or electrodes for fuel cells)
IT 100-43-6D, 4-Vinylpyridine, polyazole derivs. 100-69-6D,
2-Vinylpyridine, polyazole derivs. 25584-58-1 25734-65-0
26101-19-9 27233-57-4 28576-59-2 29383-23-1D,
Vinylimidazole, polyazole derivs. 29692-96-4 31851-25-9 32075-68-6
32109-42-5, Poly(1H-benzimidazole-2,5-diyl) 39151-97-8
42209-07-4 51324-98-2D, Poly(2,6-pyridinediyl), polyazole derivs.
54674-37-2, Poly(2,5-pyrimidinediyl) 55861-56-8 56411-22-4
56713-21-4 96926-85-1 96937-25-6 96937-27-8 97702-63-1D,
Poly(3,5-pyridinediyl), polyazole derivs. 111404-15-0 111404-18-3
111404-83-2 111404-85-4 132937-69-0 132955-49-8
240799-37-5 268567-69-7 367276-48-0 368871-22-1
471256-97-0 471256-98-1 471256-99-2
471257-00-8 471257-01-9 471257-02-0 471257-03-1
471257-04-2 471257-05-3 471257-06-4 471257-07-5
471257-08-6 471257-09-7 471257-10-0 471257-11-1
471257-12-2 472960-34-2 675130-04-8 832113-32-3 857855-79-9D
, Poly(4,6-pyrimidinediyl), polyazole derivs.
RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
(proton-conducting membranes based on polyazoles prepared from solns. of monomers in phosphonic acid anhydrides on supports or electrodes for fuel cells)
IT 25734-65-0 28576-59-2 29383-23-1D,
Vinylimidazole, polyazole derivs. 32109-42-5,
Poly(1H-benzimidazole-2,5-diyl) 54674-37-2, Poly(2,5-pyrimidinediyl) 96926-85-1 132937-69-0
240799-37-5 268567-69-7 471256-97-0
471256-98-1 471257-00-8 471257-03-1
471257-04-2 471257-07-5 471257-09-7
857855-79-9D, Poly(4,6-pyrimidinediyl), polyazole derivs.
RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
(proton-conducting membranes based on polyazoles prepared from solns. of monomers in phosphonic acid anhydrides on supports or electrodes for fuel cells)

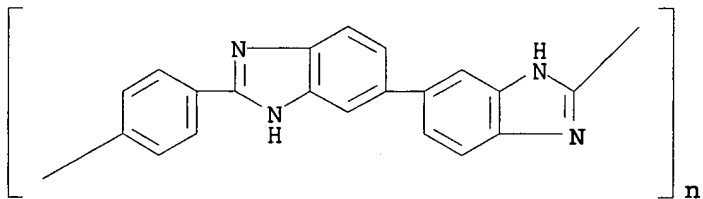
RN 25734-65-0 HCAPLUS

CN Poly([5,5'-bi-1H-benzimidazole]-2,2'-diyl-1,3-phenylene) (9CI) (CA INDEX NAME)



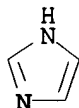
RN 28576-59-2 HCAPLUS

CN Poly([5,5'-bi-1H-benzimidazole]-2,2'-diyl-1,4-phenylene) (9CI) (CA INDEX NAME)



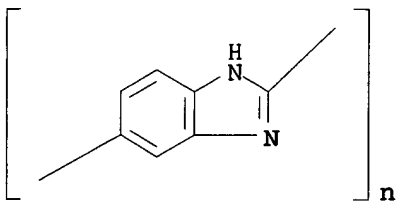
RN 29383-23-1 HCAPLUS

CN 1H-Imidazole, ethenyl- (9CI) (CA INDEX NAME)

D1-CH=CH₂

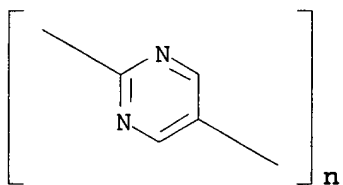
RN 32109-42-5 HCAPLUS

CN Poly(1H-benzimidazole-2,5-diyl) (9CI) (CA INDEX NAME)



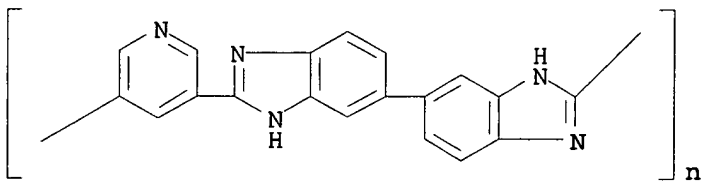
RN 54674-37-2 HCAPLUS

CN Poly(2,5-pyrimidinediyl) (9CI) (CA INDEX NAME)



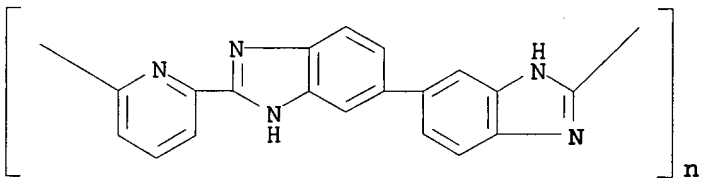
RN 96926-85-1 HCAPLUS

CN Poly([5,5'-bi-1H-benzimidazole]-2,2'-diyl-3,5-pyridinediyl) (9CI) (CA INDEX NAME)



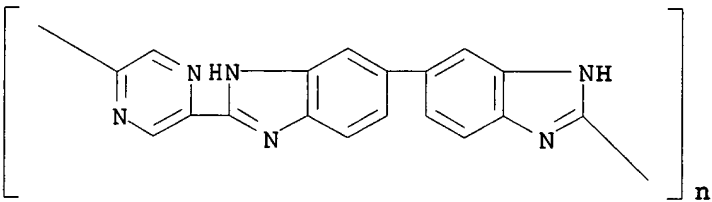
RN 132937-69-0 HCAPLUS

CN Poly([5,5'-bi-1H-benzimidazole]-2,2'-diyl-2,6-pyridinediyl) (9CI) (CA INDEX NAME)



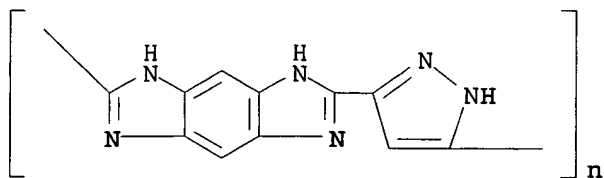
RN 240799-37-5 HCAPLUS

CN Poly([5,5'-bi-1H-benzimidazole]-2,2'-diyl-2,5-pyrazinediyl) (9CI) (CA INDEX NAME)



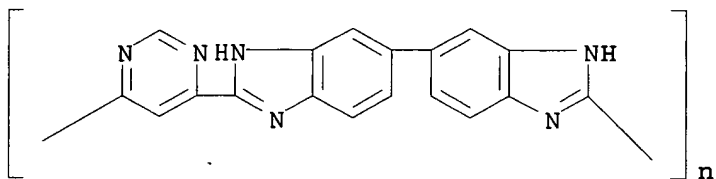
RN 268567-69-7 HCAPLUS

CN Poly[(1,5-dihydrobenzo[1,2-d:4,5-d']diimidazole-2,6-diyl)-1H-pyrazole-3,5-diyl] (9CI) (CA INDEX NAME)



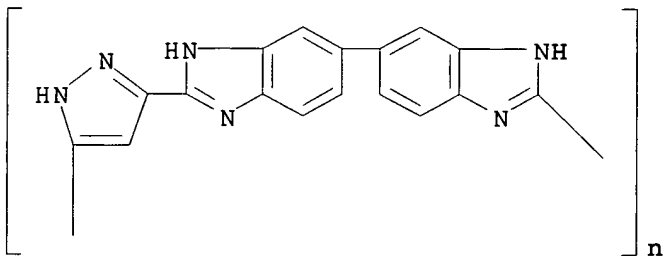
RN 471256-97-0 HCAPLUS

CN Poly([5,5'-bi-1H-benzimidazole]-2,2'-diyl-4,6-pyrimidinediyl) (9CI) (CA INDEX NAME)



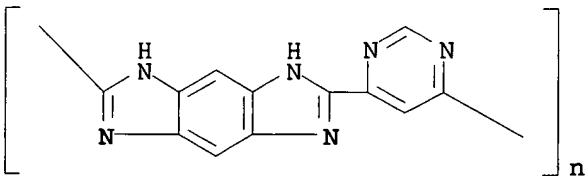
RN 471256-98-1 HCAPLUS

CN Poly([5,5'-bi-1H-benzimidazole]-2,2'-diyl-1H-pyrazole-3,5-diyl) (9CI) (CA INDEX NAME)



RN 471257-00-8 HCAPLUS

CN Poly([(1,5-dihydrobenzo[1,2-d:4,5-d']diimidazole-2,6-diyl)-4,6-pyrimidinediyl] (9CI) (CA INDEX NAME)



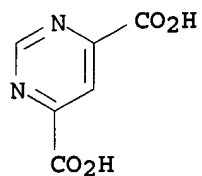
RN 471257-03-1 HCAPLUS

CN 4,6-Pyrimidinedicarboxylic acid, polymer with [1,1'-biphenyl]-3,3',4,4'-tetramine (9CI) (CA INDEX NAME)

CM 1

CRN 16490-02-1

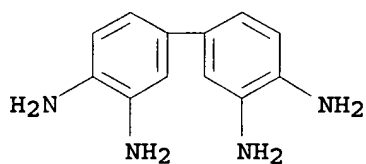
CMF C6 H4 N2 O4



CM 2

CRN 91-95-2

CMF C12 H14 N4



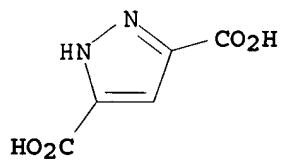
RN 471257-04-2 HCAPLUS

CN 1H-Pyrazole-3,5-dicarboxylic acid, polymer with [1,1'-biphenyl]-3,3',4,4'-tetramine (9CI) (CA INDEX NAME)

CM 1

CRN 3112-31-0

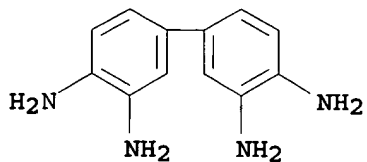
CMF C5 H4 N2 O4



CM 2

CRN 91-95-2

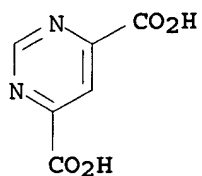
CMF C12 H14 N4



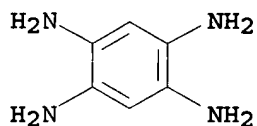
RN 471257-07-5 HCAPLUS

CN 4,6-Pyrimidinedicarboxylic acid, polymer with 1,2,4,5-benzenetetramine (9CI) (CA INDEX NAME)

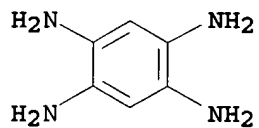
CM 1

CRN 16490-02-1
CMF C6 H4 N2 O4

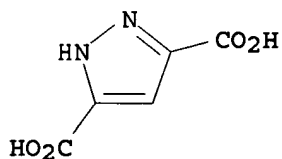
CM 2

CRN 3204-61-3
CMF C6 H10 N4RN 471257-09-7 HCAPLUS
CN 1H-Pyrazole-3,5-dicarboxylic acid, polymer with 1,2,4,5-benzenetetramine
(9CI) (CA INDEX NAME)

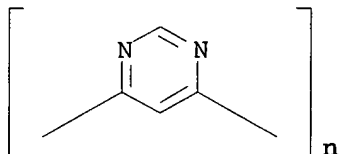
CM 1

CRN 3204-61-3
CMF C6 H10 N4

CM 2

CRN 3112-31-0
CMF C5 H4 N2 O4

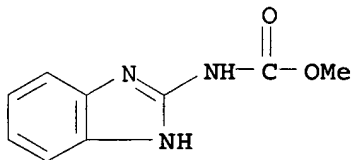
RN 857855-79-9 HCAPLUS
CN Poly(4,6-pyrimidinediyl) (9CI) (CA INDEX NAME)



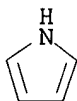
RE.CNT 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L57 ANSWER 7 OF 33 HCAPLUS COPYRIGHT 2006 ACS on STN
AN 2005:444975 HCAPLUS
DN 143:207531
TI Utilisation of **polypyrrole** modified **electrode** for the determination of pesticides
AU Manisankar, Paramasivam; Selvanathan, Ganeshan; Vedhi, Chinnapyan
CS Department of Chemistry, Periyar University, Salem, Tamil Nadu, 636011, India
SO International Journal of Environmental Analytical Chemistry (2005), 85(6), 409-422
CODEN: IJEAA3; ISSN: 0306-7319
PB Taylor & Francis Ltd.
DT Journal
LA English
AB Cyclic voltammetric studies of isoproturon and carbendazim using **polypyrrole** modified glassy carbon **electrode** were carried out. The **electrode** and reaction conditions, which yielded maximum current signal, were selected for the development of stripping voltammetric procedure for the determination of the pesticides. The oxidation peak around 1.3 V, obtained for isoproturon and carbendazim while employing **polypyrrole** modified **electrode**, showed maximum current response. This peak was chosen for stripping anal. using square wave mode. The exptl. parameters were optimized and the calibration plot was obtained. The LOD was 0.5 ng mL⁻¹ for isoproturon and 5 ng mL⁻¹ for carbendazim. The relative standard deviation for 5 identical measurements was 2.81% and 3.33% for isoproturon and carbendazim, resp. The applicability of the method was verified by determining the pesticides in spiked soil and water samples.
CC 5-1 (Agrochemical Bioregulators)
Section cross-reference(s): 80
ST **polypyrrole** modified **electrode** pesticide detn cyclic voltammetry
IT Waters
(anal.; **polypyrrole**-modified **electrode** for pesticide determination by cyclic voltammetry)
IT Cyclic voltammetry
Pesticides
Soil analysis
(**polypyrrole**-modified **electrode** for pesticide determination by cyclic voltammetry)
IT 10605-21-7, Carbendazim 34123-59-6, Isoproturon
RL: ANT (Analyte); ANST (Analytical study)
(**polypyrrole**-modified **electrode** for pesticide determination by cyclic voltammetry)

IT 30604-81-0, Polypyrrole
RL: ARU (Analytical role, unclassified); ANST (Analytical study)
(polypyrrole-modified electrode for pesticide determination
by cyclic voltammetry)
IT 10605-21-7, Carbendazim
RL: ANT (Analyte); ANST (Analytical study)
(polypyrrole-modified electrode for pesticide determination
by cyclic voltammetry)
RN 10605-21-7 HCAPLUS
CN Carbamic acid, 1H-benzimidazol-2-yl-, methyl ester (9CI) (CA INDEX NAME)



IT 30604-81-0, Polypyrrole
RL: ARU (Analytical role, unclassified); ANST (Analytical study)
(polypyrrole-modified electrode for pesticide determination
by cyclic voltammetry)
RN 30604-81-0 HCAPLUS
CN 1H-Pyrrole, homopolymer (9CI) (CA INDEX NAME)
CM 1
CRN 109-97-7
CMF C4 H5 N



RE.CNT 22 THERE ARE 22 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L57 ANSWER 8 OF 33 HCAPLUS COPYRIGHT 2006 ACS on STN
AN 2005:438618 HCAPLUS
DN 143:127185
TI Ferrocene-functionalized cationic polythiophene for the label-free
electrochemical detection of DNA
AU Le Floch, Fabien; Ho, Hoang-Anh; Harding-Lepage, Patricia; Bedard,
Melanie; Neagu-Plesu, Rodica; Leclerc, Mario
CS Canada Research Chair in Electroactive and Photoactive Polymers and CERSIM
Departement de Chimie, Universite Laval, Quebec City, QC, PQ G1K 7P4, Can.
SO Advanced Materials (Weinheim, Germany) (2005), 17(10), 1251-1254
CODEN: ADVMEW; ISSN: 0935-9648
PB Wiley-VCH Verlag GmbH & Co. KGaA
DT Journal
LA English
AB Specific, sensitive detection of unlabeled target DNA at room temperature is
reported. A new, water-soluble, ferrocene-functionalized, cationic
polythiophene is synthesized. This conducting polymer, used together with
gold-bound peptide nucleic acid (PNA) probes, makes, by a simple

electrostatic method, DNA detection possible.

CC 3-1 (Biochemical Genetics)

IT Nucleic acid hybridization
(cDNA-peptide nucleic acid; ferrocene-functionalized cationic **polythiophene** for label-free electrochem. detection of DNA with peptide nucleic acid probe-coated gold **electrodes**)

IT DNA
RL: ANT (Analyte); BSU (Biological study, unclassified); ANST (Analytical study); BIOL (Biological study)
(ferrocene-functionalized cationic **polythiophene** for label-free electrochem. detection of DNA with peptide nucleic acid probe-coated gold **electrodes**)

IT Peptide nucleic acids
RL: ARG (Analytical reagent use); BUU (Biological use, unclassified); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(ferrocene-functionalized cationic **polythiophene** for label-free electrochem. detection of DNA with peptide nucleic acid probe-coated gold **electrodes**)

IT Probes (nucleic acid)
RL: ARG (Analytical reagent use); BUU (Biological use, unclassified); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(peptide nucleic acid; ferrocene-functionalized cationic **polythiophene** for label-free electrochem. detection of DNA with peptide nucleic acid probe-coated gold **electrodes**)

IT **Electrodes**
(voltammetric, peptide nucleic acid-coated gold; ferrocene-functionalized cationic **polythiophene** for label-free electrochem. detection of DNA with peptide nucleic acid probe-coated gold **electrodes**)

IT Biosensors
(voltammetric; ferrocene-functionalized cationic **polythiophene** for label-free electrochem. detection of DNA with peptide nucleic acid probe-coated gold **electrodes**)

IT 857887-54-8
RL: ARG (Analytical reagent use); BUU (Biological use, unclassified); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(cationic **polythiophene**; ferrocene-functionalized cationic **polythiophene** for label-free electrochem. detection of DNA with peptide nucleic acid probe-coated gold **electrodes** in relation to)

IT 858120-90-8P
RL: ARG (Analytical reagent use); BUU (Biological use, unclassified); SPN (Synthetic preparation); ANST (Analytical study); BIOL (Biological study); PREP (Preparation); USES (Uses)
(ferrocene-functionalized cationic **polythiophene**; ferrocene-functionalized cationic **polythiophene** for label-free electrochem. detection of DNA with peptide nucleic acid probe-coated gold **electrodes**)

IT 7440-57-5, Gold, biological studies
RL: ARG (Analytical reagent use); BUU (Biological use, unclassified); DEV (Device component use); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(peptide nucleic acid-coated; ferrocene-functionalized cationic **polythiophene** for label-free electrochem. detection of DNA with peptide nucleic acid probe-coated gold **electrodes**)

IT 857887-54-8
RL: ARG (Analytical reagent use); BUU (Biological use, unclassified); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(cationic **polythiophene**; ferrocene-functionalized cationic **polythiophene** for label-free electrochem. detection of DNA with

peptide nucleic acid probe-coated gold electrodes in relation to)

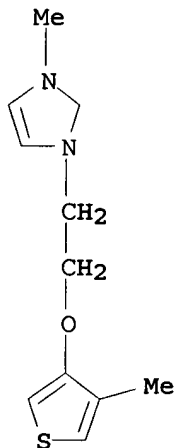
RN 857887-54-8 HCAPLUS

CN 1H-Imidazolium, 1-methyl-3-[2-[(4-methyl-3-thienyl)oxy]ethyl]-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 719995-09-2

CMF C11 H15 N2 O S



ONE OR MORE TAUTOMERIC DOUBLE BONDS NOT DISPLAYED IN THE STRUCTURE

RE.CNT 20 THERE ARE 20 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L57 ANSWER 9 OF 33 HCAPLUS COPYRIGHT 2006 ACS on STM

AN 2005:347302 HCAPLUS

DN 142:402470

TI Composite electrodes, electrolytes, and redox capacitors

IN Tateishi, Kazuyuki; Murakami, Mutsuaki; Yamagishi, Hideo; Furutani, Hiroyuki; Tachibana, Masamitsu

PA Kaneka Corporation, Japan

SO PCT Int. Appl., 38 pp.

CODEN: PIXXD2

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2005036573	A1	20050421	WO 2004-JP14140	20040921
	W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW			
	RW:	BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG			

PRAI JP 2003-351295 A 20031009

AB Disclosed are an electrode composite body using a conductive polymer film wherein the doping and dedoping capacitance of the conductive polymer are improved, an electrolyte, and a redox capacitor comprising those. Specifically disclosed are (1) an electrode composite body for redox capacitors which includes a conductive polymer and an electrode, (2) an electrode composite body for redox capacitors which includes a conductive polymer film and an electrode, (3) an electrolyte for redox capacitors which essentially contains an ionic liquid, (4) a redox capacitor composed of an electrolyte essentially containing an ionic liquid and an electrode composite body for redox capacitors, and (5) a composite body which is characterized in that the anion content in the ionic liquid is the same element as a part of the dopant of the conductive polymer.

IC ICM H01G009-058

ICS H01G009-038

CC 76-10 (Electric Phenomena)

IT 143314-16-3P, 1-Ethyl-3-methylimidazolium tetrafluoroborate

174501-65-6P, 1-Butyl-3-methylimidazolium tetrafluoroborate

328090-25-1P

RL: PNU (Preparation, unclassified); PRP (Properties); PREP (Preparation)
(composite **electrodes** and electrolytes and redox capacitors)

IT 25233-34-5, Polythiophene 30604-81-0,

Polypyrrole

RL: PRP (Properties)

(conductor film; composite **electrodes** and electrolytes and
redox capacitors)

IT 143314-16-3P, 1-Ethyl-3-methylimidazolium tetrafluoroborate

174501-65-6P, 1-Butyl-3-methylimidazolium tetrafluoroborate

328090-25-1P

RL: PNU (Preparation, unclassified); PRP (Properties); PREP (Preparation)
(composite **electrodes** and electrolytes and redox capacitors)

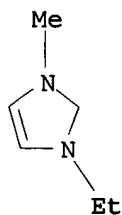
RN 143314-16-3 HCAPLUS

CN 1H-Imidazolium, 1-ethyl-3-methyl-, tetrafluoroborate(1-) (9CI) (CA INDEX
NAME)

CM 1

CRN 65039-03-4

CMF C6 H11 N2



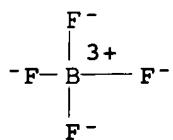
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CM 2

CRN 14874-70-5

CMF B F4

CCI CCS



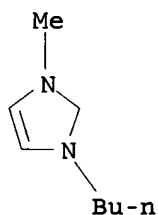
RN 174501-65-6 HCAPLUS

CN 1H-Imidazolium, 1-butyl-3-methyl-, tetrafluoroborate(1-) (9CI) (CA INDEX NAME)

CM 1

CRN 80432-08-2

CMF C8 H15 N2



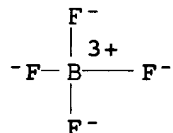
ONE OR MORE TAUTOMERIC DOUBLE BONDS NOT DISPLAYED IN THE STRUCTURE

CM 2

CRN 14874-70-5

CMF B F4

CCI CCS



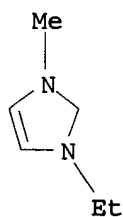
RN 328090-25-1 HCAPLUS

CN 1H-Imidazolium, 1-ethyl-3-methyl-, salt with 4-methylbenzenesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 65039-03-4

CMF C6 H11 N2

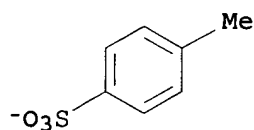


ONE OR MORE TAUTOMERIC DOUBLE BONDS NOT DISPLAYED IN THE STRUCTURE

CM 2

CRN 16722-51-3

CMF C7 H7 O3 S



IT 30604-81-0, Polypyrrole

RL: PRP (Properties)

(conductor film; composite electrodes and electrolytes and redox capacitors)

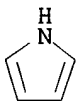
RN 30604-81-0 HCAPLUS

CN 1H-Pyrrole, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 109-97-7

CMF C4 H5 N



RE.CNT 17 THERE ARE 17 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L57 ANSWER 10 OF 33 HCAPLUS COPYRIGHT 2006 ACS on STN

AN 2005:293697 HCAPLUS

DN 143:450596

TI Electrochemical Actuator Devices Based on Polyaniline Yarns and Ionic Liquid Electrolytes

AU Lu, Wen; Norris, Ian D.; Mattes, Benjamin R.

CS Santa Fe Science and Technology, Santa Fe, NM, 87507, USA

SO Australian Journal of Chemistry (2005), 58(4), 263-269

CODEN: AJCHAS; ISSN: 0004-9425

PB CSIRO Publishing

DT Journal

LA English

- AB Conducting polymer electrochem. linear actuators were developed and fabricated from ionic liqs. (as electrolytes) and **polyaniline** yarns and hollow fibers (as **electrode** materials), e.g., Panion triflate and 1-butyl-3-Me imidazolium tetrafluoroborate [bmim]BF₄. With a yarn-in-fiber configuration, these actuators were simple to fabricate and allowed two-**electrode** operation without a reference **electrode**. Typical electromech. actuation behavior of expansion, with force decrease, and contraction, with force increase, during charge injection and removal was realized for these actuators. Stress generation of these actuators was 0.420.85 MPa, which exceeds that of skeletal muscle (0.1 - 0.5 MPa). Practical application of the actuators was demonstrated by using electrochem. actuation of a yarn-in-fiber actuator to drive a cantilever object. Importantly, this yarn-in-fiber configuration would allow the combination of an appropriate number of yarns as the actuation **electrode** to accomplish the mech. task, depending on the weight of the object.
- CC 76-14 (Electric Phenomena)
Section cross-reference(s): 36, 72
- ST **polyaniline** yarn **electrode** ionic liq electrolyte
electromech actuator
- IT **Electrodes**
(actuator; operation of electrochem. actuator devices with yarn-in-fiber **polyaniline electrodes** and ionic liquid electrolyte)
- IT Synthetic polymeric fibers, uses
RL: DEV (Device component use); USES (Uses)
(aniline, triflate-containing; operation of electrochem. actuator devices with yarn-in-fiber **polyaniline electrodes** and ionic liquid electrolyte)
- IT Electrolytes
(electrochem. actuator; operation of electrochem. actuator devices with yarn-in-fiber **polyaniline electrodes** and ionic liquid electrolyte)
- IT Redox reaction
(electrochem., cyclic; operation of electrochem. actuator devices with yarn-in-fiber **polyaniline electrodes** and ionic liquid electrolyte)
- IT Actuators
(electrochem.; operation of electrochem. actuator devices with yarn-in-fiber **polyaniline electrodes** and ionic liquid electrolyte)
- IT **Polyanilines**
RL: DEV (Device component use); USES (Uses)
(fiber, triflate-containing; operation of electrochem. actuator devices with yarn-in-fiber **polyaniline electrodes** and ionic liquid electrolyte)
- IT Fibers
RL: DEV (Device component use); USES (Uses)
(hollow; operation of electrochem. actuator devices with yarn-in-fiber **polyaniline electrodes** and ionic liquid electrolyte)
- IT Contraction (mechanical)
Electromechanical effect
Expansion
Ionic liquids
Yarns
(operation of electrochem. actuator devices with yarn-in-fiber **polyaniline electrodes** and ionic liquid electrolyte)
- IT Conducting polymers
(**polyaniline**, triflate containing; operation of electrochem. actuator devices with yarn-in-fiber **polyaniline**

electrodes and ionic liquid electrolyte)

IT **Polyanilines**
 RL: DEV (Device component use); USES (Uses)
 (triflate containing; operation of electrochem. actuator devices with
 yarn-in-fiber **polyaniline electrodes** and ionic liquid
 electrolyte)

IT 1493-13-6, Triflic acid
 RL: MOA (Modifier or additive use); USES (Uses)
 (dopant; operation of electrochem. actuator devices with yarn-in-fiber
polyaniline electrodes and ionic liquid electrolyte)

IT 25014-41-9, Polyacrylonitrile
 RL: DEV (Device component use); USES (Uses)
 (nanofiber, separator; operation of electrochem. actuator devices with
 yarn-in-fiber **polyaniline electrodes** and ionic liquid
 electrolyte)

IT **174501-65-6, 1-Butyl-3-methyl imidazolium tetrafluoroborate**
 RL: DEV (Device component use); USES (Uses)
 (operation of electrochem. actuator devices with yarn-in-fiber
polyaniline electrodes and ionic liquid electrolyte)

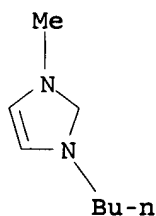
IT **25233-30-1, Polyaniline**
 RL: DEV (Device component use); USES (Uses)
 (triflate containing; operation of electrochem. actuator devices with
 yarn-in-fiber **polyaniline electrodes** and ionic liquid
 electrolyte)

IT **174501-65-6, 1-Butyl-3-methyl imidazolium tetrafluoroborate**
 RL: DEV (Device component use); USES (Uses)
 (operation of electrochem. actuator devices with yarn-in-fiber
polyaniline electrodes and ionic liquid electrolyte)

RN 174501-65-6 HCAPLUS
 CN 1H-Imidazolium, 1-butyl-3-methyl-, tetrafluoroborate(1-) (9CI) (CA INDEX
 NAME)

CM 1

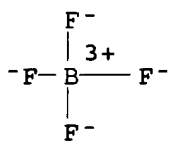
CRN 80432-08-2
 CMF C8 H15 N2



ONE OR MORE TAUTOMERIC DOUBLE BONDS NOT DISPLAYED IN THE STRUCTURE

CM 2

CRN 14874-70-5
 CMF B F4
 CCI CCS



IT 25233-30-1, Polyaniline

RL: DEV (Device component use); USES (Uses)

(triflate containing; operation of electrochem. actuator devices with yarn-in-fiber polyaniline electrodes and ionic liquid electrolyte)

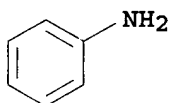
RN 25233-30-1 HCAPLUS

CN Benzenamine, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 62-53-3

CMF C6 H7 N



RE.CNT 35 THERE ARE 35 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L57 ANSWER 11 OF 33 HCAPLUS COPYRIGHT 2006 ACS on STN

AN 2004:964547 HCAPLUS

DN 141:417632

TI Reversible electro-optic device employing aprotic molten salts and method

IN Warner, Benjamin P.; McCleskey, T. Mark; Burrell, Anthony K.; Hall, Simon B.

PA The Regents of The University of California, USA

SO U.S. Pat. Appl. Publ., 15 pp.

CODEN: USXXCO

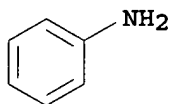
DT Patent

LA English

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 2004223207	A1	20041111	US 2003-430780	20030505
	US 6862125	B2	20050301		
	WO 2004099863	A2	20041118	WO 2004-US7643	20040311
	WO 2004099863	A3	20050414		
W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
RW:	BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				

US 2004227983 A1 20041118 US 2004-831572 20040422
PRAI US 2003-430780 A 20030505
OS MARPAT 141:417632
AB Reversible electrooptical devices (e.g., reversible electrodeposited mirrors) that comprise a chamber and, as the medium of variable transmittance to light, a solution of an aprotic molten salt, ≥ 1 soluble metal-containing species comprising metal capable of being electrodeposited, and ≥ 1 anodic compound capable of being oxidized are described in which the solution comprises anions which do not bind strongly enough to the metal-containing species to form metal complexes with the anions. Preferably, the aprotic molten salt is liquid at room temperature and includes lithium and/or quaternary ammonium cations, and anions selected from trifluoromethylsulfonate, bis(trifluoromethylsulfonyl)imide, bis(perfluoroethylsulfonyl)imide, and tris(trifluoromethylsulfonyl)methide. The devices may also employ UV stabilizers and stiffening agents (e.g., polymers) and thixotropic agents. The molten salt solution may include an aprotic organic cosolvent with a b.p. $>150^\circ$.
IC ICM G02F001-15
INCL 359265000
CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): 72
IT Conducting polymers
(polythiophenes; reversible electrodeposition-based electrooptical devices employing aprotic molten salts)
IT Polyanilines
Quaternary ammonium compounds, uses
RL: DEV (Device component use); USES (Uses)
(reversible electrodeposition-based electrooptical devices employing aprotic molten salts)
IT 108-32-7, Propylene carbonate 306-94-5, Perfluorodecalin 307-45-9, Perfluorodecane. 872-50-4, uses 1312-43-2, Indium oxide 1313-96-8, Niobium oxide 1314-62-1, Vanadium pentoxide, uses 11098-99-0, Molybdenum oxide 11104-61-3, Cobalt oxide 12240-15-2, Prussian blue 12645-46-4, Iridium oxide 25233-30-1, Polyaniline
RL: DEV (Device component use); USES (Uses)
(reversible electrodeposition-based electrooptical devices employing aprotic molten salts)
IT 174899-83-3P 223437-11-4P
RL: DEV (Device component use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(reversible electrodeposition-based electrooptical devices employing aprotic molten salts)
IT 1313-99-1, Nickel oxide, reactions 79917-90-1 85100-77-2
90076-65-6, Lithium bis(trifluoromethylsulfonyl)imide 93457-69-3
479500-35-1
RL: RCT (Reactant); RACT (Reactant or reagent)
(reversible electrodeposition-based electrooptical devices employing aprotic molten salts)
IT 25233-30-1, Polyaniline
RL: DEV (Device component use); USES (Uses)
(reversible electrodeposition-based electrooptical devices employing aprotic molten salts)
RN 25233-30-1 HCAPLUS
CN Benzenamine, homopolymer (9CI) (CA INDEX NAME)
CM 1
CRN 62-53-3
CMF C6 H7 N



IT 174899-83-3P

RL: DEV (Device component use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)

(reversible **electrodeposition**-based electrooptical devices employing aprotic molten salts)

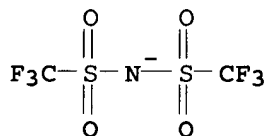
RN 174899-83-3 HCAPLUS

CN 1H-Imidazolium, 1-butyl-3-methyl-, salt with 1,1,1-trifluoro-N-[(trifluoromethyl)sulfonyl]methanesulfonamide (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 98837-98-0

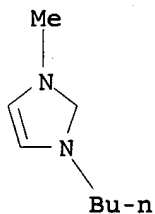
CMF C2 F6 N O4 S2



CM 2

CRN 80432-08-2

CMF C8 H15 N2



ONE OR MORE TAUTOMERIC DOUBLE BONDS NOT DISPLAYED IN THE STRUCTURE

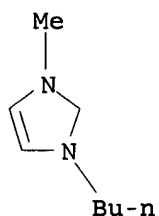
IT 79917-90-1 85100-77-2

RL: RCT (Reactant); RACT (Reactant or reagent)

(reversible **electrodeposition**-based electrooptical devices employing aprotic molten salts)

RN 79917-90-1 HCAPLUS

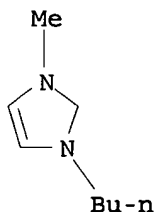
CN 1H-Imidazolium, 1-butyl-3-methyl-, chloride (9CI) (CA INDEX NAME)

● Cl⁻

ONE OR MORE TAUTOMERIC DOUBLE BONDS NOT DISPLAYED IN THE STRUCTURE

RN 85100-77-2 HCAPLUS

CN 1H-Imidazolium, 1-butyl-3-methyl-, bromide (9CI) (CA INDEX NAME)

● Br⁻

ONE OR MORE TAUTOMERIC DOUBLE BONDS NOT DISPLAYED IN THE STRUCTURE

RE.CNT 22 THERE ARE 22 CITED REFERENCES AVAILABLE FOR THIS RECORD

ALL CITATIONS AVAILABLE IN THE RE FORMAT

L57 ANSWER 12 OF 33 HCAPLUS COPYRIGHT 2006 ACS on STN

AN 2004:605443 HCAPLUS

DN 141:143194

TI Method of fabrication of membrane electrode unit for polymer electrolyte fuel cells

IN Melzner, Dieter; Reiche, Annette; Maehr, Ulrich; Kiel, Suzana

PA Sartorius Ag, Germany

SO Ger. Offen., 12 pp.

CODEN: GWXXBX

DT Patent

LA German

FAN.CNT 2

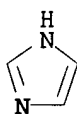
	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	DE 10301810	A1	20040729	DE 2003-10301810	20030120
	WO 2004066428	A2	20040805	WO 2003-EP14623	20031219
	WO 2004066428	A3	20050818		

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN,

TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY,
KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES,
FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR,
BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG
EP 1593172 A2 20051109 EP 2003-815370 20031219
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,
IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK
DE 202004000365 U1 20040422 DE 2004-202004000365 20040113
PRAI DE 2003-10301810 A 20030120
WO 2003-EP14623 W 20031219
AB The invention concerns a membrane-electrode unit and polymer electrolyte
fuel cell using the same for operating temperature $\leq 250^\circ$, as well
as method of fabrication of the membrane. Membrane-electrode units of the
polymer electrolyte fuel cells consist of ≥ 2 laminar gas distribution
electrodes and a sandwich-like polymer membrane (provided between the
electrodes) with at least a basic polymer as well as a dopant, with which
the gas distribution electrodes are in such a manner loaded that they
represent a dopant reservoir for the polymer membrane, whereby the polymer
membrane is proton-conductively and firmly tied up to the gas distribution
electrodes over the dopant after the effect of pressure and temperature. In the
doped condition, it shows a conductivity of at least 0.1 S/m at a temperature of
 $< 25^\circ$. The invention is applicable directly for stationary and
mobile power generation from chemical energy.
IC ICM H01M008-02
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 38
IT Polybenzimidazoles
Polybenzothiazoles
Polybenzoxazoles
Polyoxadiazoles
Polyquinoxalines
RL: DEV (Device component use); USES (Uses)
(method of fabrication of membrane electrode unit for polymer
electrolyte fuel cells)
IT 129-00-0D, Pyrene, tetraaza derivs., polymers 298-07-7,
Bis(2-ethylhexyl) phosphate 838-85-7, Diphenylphosphate
25013-01-8, Polypyridine 82370-43-2,
Polyimidazole 128611-69-8, 1,3,4-Thiadiazole homopolymer
190201-51-5, Pyrimidine, homopolymer
RL: DEV (Device component use); USES (Uses)
(method of fabrication of membrane electrode unit for polymer
electrolyte fuel cells)
IT 25013-01-8, Polypyridine 82370-43-2,
Polyimidazole 190201-51-5, Pyrimidine, homopolymer
RL: DEV (Device component use); USES (Uses)
(method of fabrication of membrane electrode unit for polymer
electrolyte fuel cells)
RN 25013-01-8 HCAPLUS
CN Pyridine, homopolymer (9CI) (CA INDEX NAME)
CM 1
CRN 110-86-1
CMF C5 H5 N



RN 82370-43-2 HCAPLUS
CN 1H-Imidazole, homopolymer (9CI) (CA INDEX NAME)
CM 1
CRN 288-32-4
CMF C3 H4 N2



RN 190201-51-5 HCAPLUS
CN Pyrimidine, homopolymer (9CI) (CA INDEX NAME)
CM 1
CRN 289-95-2
CMF C4 H4 N2



L57 ANSWER 13 OF 33 HCAPLUS COPYRIGHT 2006 ACS on STN
AN 2004:500393 HCAPLUS
DN 141:197277
TI Manipulation of the ultimate pattern of **polypyrrole** film on self-assembled monolayer patterned substrate by negative or positive **electrodeposition**
AU Zhou, Feng; Liu, Zhilu; Yu, Bo; Chen, Miao; Hao, Jingcheng; Liu, Weimin; Xue, Qunji
CS Lanzhou Institute of Chemical Physics, State Key Laboratory of Solid Lubrication, Chinese Academy of Sciences, Lanzhou, 730000, Peop. Rep. China
SO Surface Science (2004), 561(1), 1-10
CODEN: SUSCAS; ISSN: 0039-6028
PB Elsevier Science B.V.
DT Journal
LA English
AB Micropatterned self-assembled monolayer may lead to different ultimate patterns of **polypyrrole** (PPy) by way of pos. or neg. deposition in guiding the **electrodeposition** of pyrrole. This article gives a detailed investigation of the effects of exptl. conditions on the ultimate patterns of the PPy films on self-assembled monolayer (SAM)-patterned silicon and gold substrates. The effects of the substrate

surface elec. properties and the nature of the solvent and supporting electrolyte on the selective deposition and the PPy film morphol. are also discussed. As the results, neg. deposition occurs on the octadecyltrichlorosilane (OTS)-covered area of semiconductor Si surface in non-aqueous acetonitrile solution and results in pos. patterns, while pos. deposition occurs in aqueous solution and gives birth to neg. patterns. This is attributed to the accessibility of the monomer solution to the substrate surface. The **electrodeposition** preferentially occurs on the exposed area of a gold substrate, though the deposition on the octadecanethiol (ODT)-covered area is unavoidable due to the hydrophobic-hydrophobic interaction. The lypophilic properties of the deposited PPy can be modified by selecting different salts as the supporting electrolytes and doping different anions during the **electrodeposition**. Subsequently, the morphol. of the **electrodeposited** PPy layer can be tailored making use of the interaction between the PPy oligomer and the surfaces of different chemical functionalities.

- CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 72
- ST **electrodeposition polypyrrole** film microcontact lithog
printed SAM modified substrate; selfassembled monolayer pattern substrate
neg pos **polypyrrole electrodeposition**
- IT Silicone rubber, uses
RL: DEV (Device component use); USES (Uses)
(di-Me, stamp; **electrodeposition** of neg. or pos.
polypyrrole patterns on substrates containing SAM patterns
generated by microcontact lithog.)
- IT Polymerization
(electrochem.; **electrodeposition** of neg. or pos.
polypyrrole patterns on substrates containing SAM patterns
generated by microcontact lithog.)
- IT Contact angle
Electric conductivity
Electrodeposition
Hydrophilicity
Hydrophobicity
Microstructure
Polymer morphology
Self-assembled monolayers
(**electrodeposition** of neg. or pos. **polypyrrole**
patterns on substrates containing SAM patterns generated by microcontact
lithog.)
- IT Lithography
(microcontact printing; **electrodeposition** of neg. or pos.
polypyrrole patterns on substrates containing SAM patterns
generated by microcontact lithog.)
- IT Electric properties
(surface; **electrodeposition** of neg. or pos.
polypyrrole patterns on substrates containing SAM patterns
generated by microcontact lithog. as function of substrate elec.
properties and nature of solvent and supporting electrolyte)
- IT 112-04-9, Octadecyltrichlorosilane 2885-00-9, 1-Octadecanethiol
RL: PEP (Physical, engineering or chemical process); PYP (Physical
process); PROC (Process)
(SAM "ink"; **electrodeposition** of neg. or pos.
polypyrrole patterns on substrates containing SAM patterns
generated by microcontact lithog.)
- IT 109-97-7, Pyrrole
RL: PEP (Physical, engineering or chemical process); PYP (Physical

process); RCT (Reactant); PROC (Process); RACT (Reactant or reagent)
(**electrodeposition** of neg. or pos. **polypyrrole**
patterns on substrates containing SAM patterns generated by microcontact
lithog.)

IT 30604-81-0P, **Polypyrrole**
RL: PEP (Physical, engineering or chemical process); PYP (Physical
process); SPN (Synthetic preparation); PREP (Preparation); PROC (Process)
(**electrodeposition** of neg. or pos. **polypyrrole**
patterns on substrates containing SAM patterns generated by microcontact
lithog.)

IT 75-05-8, Acetonitrile, properties 7732-18-5, Water, properties
RL: PEP (Physical, engineering or chemical process); PRP (Properties); PYP
(Physical process); PROC (Process)
(solvent; **electrodeposition** of neg. or pos.
polypyrrole patterns on substrates containing SAM patterns
generated by microcontact lithog. as function of substrate elec.
properties and nature of solvent and supporting electrolyte)

IT 9016-00-6, Polydimethylsiloxane 31900-57-9, Polydimethylsiloxane
RL: DEV (Device component use); USES (Uses)
(stamp; **electrodeposition** of neg. or pos. **polypyrrole**
patterns on substrates containing SAM patterns generated by microcontact
lithog.)

IT 7440-21-3, Silicon, processes 7440-57-5, Gold, processes
RL: PEP (Physical, engineering or chemical process); PYP (Physical
process); PROC (Process)
(substrate; **electrodeposition** of neg. or pos.
polypyrrole patterns on substrates containing SAM patterns
generated by microcontact lithog.)

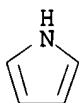
IT 429-42-5, Tetrabutylammonium tetrafluoroborate 2386-53-0, Sodium
dodecylsulfonate 3109-63-5, Tetrabutylammonium hexafluorophosphate
7647-14-5, Sodium chloride, properties 7791-03-9, Lithium perchlorate
244193-48-4
RL: PEP (Physical, engineering or chemical process); PRP (Properties); PYP
(Physical process); PROC (Process)
(supporting electrolyte; **electrodeposition** of neg. or pos.
polypyrrole patterns on substrates containing SAM patterns
generated by microcontact lithog. as function of substrate elec.
properties and nature of solvent and supporting electrolyte)

IT 30604-81-0P, **Polypyrrole**
RL: PEP (Physical, engineering or chemical process); PYP (Physical
process); SPN (Synthetic preparation); PREP (Preparation); PROC (Process)
(**electrodeposition** of neg. or pos. **polypyrrole**
patterns on substrates containing SAM patterns generated by microcontact
lithog.)

RN 30604-81-0 HCAPLUS
CN 1H-Pyrrole, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 109-97-7
CMF C4 H5 N



IT 244193-48-4

RL: PEP (Physical, engineering or chemical process); PRP (Properties); PYP (Physical process); PROC (Process)

(supporting electrolyte; **electrodeposition** of neg. or pos. **polypyrrole** patterns on substrates containing SAM patterns generated by microcontact lithog. as function of substrate elec. properties and nature of solvent and supporting electrolyte)

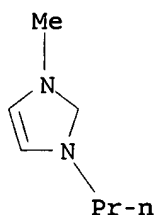
RN 244193-48-4 HCAPLUS

CN 1H-Imidazolium, 1-methyl-3-propyl-, tetrafluoroborate(1-) (9CI) (CA INDEX NAME)

CM 1

CRN 80432-06-0

CMF C7 H13 N2



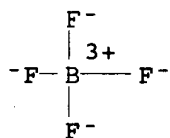
ONE OR MORE TAUTOMERIC DOUBLE BONDS NOT DISPLAYED IN THE STRUCTURE

CM 2

CRN 14874-70-5

CMF B F4

CCI CCS



RE.CNT 41 THERE ARE 41 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L57 ANSWER 14 OF 33 HCAPLUS COPYRIGHT 2006 ACS on STN

AN 2004:417024 HCAPLUS

DN 141:403419

TI I-/I3- redox reaction behavior on poly(3,4-ethylenedioxythiophene) counter-electrode in dye-sensitized solar cells

AU Saito, Yasuteru; Kubo, Wataru; Kitamura, Takayuki; Wada, Yuji; Yanagida, Shozo

CS Graduate School of Engineering, Material and Life Science, Osaka University, Osaka, Suita, 565-0871, Japan

SO Journal of Photochemistry and Photobiology, A: Chemistry (2004), 164(1-3), 153-157

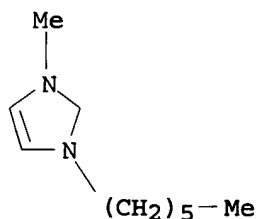
CODEN: JPPCEJ; ISSN: 1010-6030

PB Elsevier Science B.V.

DT Journal

LA English

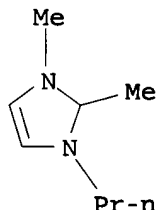
- AB I-/I3- redox reaction behaviors on chemical polymerized p-toluenesulfonate doped poly(3,4-ethylenedioxythiophene) (PEDOT-TsO) and sputtered-Pt electrode were characterized to compare its performance as the counterelectrode in dye sensitized solar cells (DSCs). Adsorption of iodide species at the PEDOT surface, as well as Pt surface was little affected the redox reaction at the low concentration of redox couple. The PEDOT-TsO film had porous structure and charge transfer resistance of the PEDOT-TsO electrode decreased with the thickness. Photovoltaic performance of DSCs with PEDOT-TsO counterelectrode (CE) also improved with the thickness of PEDOT-TsO when ionic liquid was used for the electrolyte. The use of porous PEDOT-TsO counterelectrode that has low cost, simplified fabrication process and sufficient catalytic activity could enhance the potential of the DSCs for practical use.
- CC 74-13 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 52, 72
- IT Conducting polymers
(polythiophenes; iodide/triiodide redox reaction on p-toluenesulfonate doped poly(3,4-ethylenedioxythiophene) and Pt electrodes in dye-sensitized solar cells)
- IT 7440-06-4, Platinum, properties 7553-56-2, Iodine, properties 10377-51-2, Lithium iodide 13463-67-7, Titania, properties 18282-10-5, Tin dioxide 118676-08-7, tert-Butylpyridine 126213-51-2, Poly(3,4-ethylenedioxythiophene) 178631-05-5, 1-Methyl-3-hexylimidazolium iodide 207347-46-4, N719 218151-78-1, 1,2-Dimethyl-3-propylimidazolium iodide
RL: CPS (Chemical process); DEV (Device component use); PEP (Physical, engineering or chemical process); PRP (Properties); PYP (Physical process); PROC (Process); USES (Uses)
(iodide/triiodide redox reaction on p-toluenesulfonate doped poly(3,4-ethylenedioxythiophene) and Pt electrodes in dye-sensitized solar cells)
- IT 178631-05-5, 1-Methyl-3-hexylimidazolium iodide 218151-78-1, 1,2-Dimethyl-3-propylimidazolium iodide
RL: CPS (Chemical process); DEV (Device component use); PEP (Physical, engineering or chemical process); PRP (Properties); PYP (Physical process); PROC (Process); USES (Uses)
(iodide/triiodide redox reaction on p-toluenesulfonate doped poly(3,4-ethylenedioxythiophene) and Pt electrodes in dye-sensitized solar cells)
- RN 178631-05-5 HCAPLUS
- CN 1H-Imidazolium, 1-hexyl-3-methyl-, iodide (9CI) (CA INDEX NAME)



● I⁻

ONE OR MORE TAUTOMERIC DOUBLE BONDS NOT DISPLAYED IN THE STRUCTURE
RN 218151-78-1 HCAPLUS

CN 1H-Imidazolium, 1,2-dimethyl-3-propyl-, iodide (9CI) (CA INDEX NAME)

● I⁻

ONE OR MORE TAUTOMERIC DOUBLE BONDS NOT DISPLAYED IN THE STRUCTURE

RE.CNT 26 THERE ARE 26 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L57 ANSWER 15 OF 33 HCAPLUS COPYRIGHT 2006 ACS on STN

AN 2004:328921 HCAPLUS

DN 140:342159

TI Polymer membranes for a membrane-electrode unit for fuel cell

PA Sartorius A.-G., Germany

SO Ger. Gebrauchsmusterschrift, 12 pp.

CODEN: GGXXFR

DT Patent

LA German

FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	DE 202004000365	U1	20040422	DE 2004-202004000365	20040113
	DE 10301810	A1	20040729	DE 2003-10301810	20030120
PRAI	DE 2003-10301810	IA	20030120		

AB A membrane-electrode unit for polymer electrolyte fuel cells with an operating temperature $\leq 250^\circ$ consists at least of two laminar gas distribution electrodes and a sandwich-like in-between arranged polymer membrane with ≥ 1 basic polymer as well as a dopant, provided between them. The gas distribution electrodes are so charged that they represent a dopant reservoir for the polymer membrane, whereby the polymer membrane is proton-conductive and firmly tied up to the gas distribution electrodes over the dopant after effect of pressure and temperature and has in the doped condition a conductivity of at least 0.1 S/m at a temperature of $>25^\circ$.

IC ICM H01M008-02

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 38

IT Polybenzimidazoles

Polybenzothiazoles

Polybenzoxazoles

Polyoxadiazoles

Polyquinoxalines

RL: DEV (Device component use); USES (Uses)

(polymer membranes for membrane-electrode unit for fuel cell)

IT 298-07-7, Di(2-ethylhexyl) phosphate 838-85-7, Diphenyl phosphate

7440-06-4, Platinum, uses 7664-38-2D, Phosphoric acid, diester

25013-01-8, Polypyridine 82370-43-2,

Polyimidazole 128611-69-8, 1,3,4-Thiadiazole homopolymer

190201-51-5, Pyrimidine homopolymer

RL: DEV (Device component use); USES (Uses)
(polymer membranes for membrane-electrode unit for fuel cell)
IT 25013-01-8, Polypyridine 82370-43-2,
Polyimidazole 190201-51-5, Pyrimidine homopolymer
RL: DEV (Device component use); USES (Uses)
(polymer membranes for membrane-electrode unit for fuel cell)
RN 25013-01-8 HCAPLUS
CN Pyridine, homopolymer (9CI) (CA INDEX NAME)

CM 1

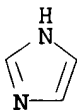
CRN 110-86-1
CMF C5 H5 N



RN 82370-43-2 HCAPLUS
CN 1H-Imidazole, homopolymer (9CI) (CA INDEX NAME)

CM 1

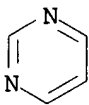
CRN 288-32-4
CMF C3 H4 N2



RN 190201-51-5 HCAPLUS
CN Pyrimidine, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 289-95-2
CMF C4 H4 N2



L57 ANSWER 16 OF 33 HCAPLUS COPYRIGHT 2006 ACS on STN
AN 2004:117315 HCAPLUS
DN 140:149157
TI An electrode for an electrochemical cell like a secondary battery and an
electric double layer capacitor
IN Nobuta, Tomoki; Nishiyama, Toshihiko; Kamisuki, Hiroyuki; Kaneko, Shinako;
Kurosaki, Masato; Nakagawa, Yuji; Mitani, Masaya
PA NEC Tokin Corporation, Japan

Applicant

SO Eur. Pat. Appl., 20 pp.

CODEN: EPXXDW

DT Patent

LA English

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 1388906	A2	20040211	EP 2003-16458	20030722
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK				
	JP 2004127920	A2	20040422	JP 2003-198660	20030717
	JP 3701952	B2	20051005		
	CN 1481042	A	20040310	CN 2003-152651	20030804
	US 2004029003	A1	20040212	<u>US 2003-634607</u>	20030805
	HK 1060654	A1	20051125	HK 2004-102952	20040427
PRAI	JP 2002-227160	A	20020805		

AB This invention provides an electrode for an electrochem. cell in which an active material in an electrode material is a proton-conducting compound, wherein the electrode material comprises a nitrogen-containing heterocyclic compound or a polymer having a unit containing a nitrogen-containing heterocyclic moiety.

IC ICM H01M004-60

ICS H01M004-02

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)

Section cross-reference(s): 27, 38, 72, 76

IT **Polyquinoxalines**

RL: DEV (Device component use); USES (Uses)

(polyphenylquinoxalines; **electrode** for electrochem. cell like secondary battery and elec. double layer capacitor)

IT 51-17-2, Benzimidazole 51-17-2D, Benzimidazole, derivative
 288-13-1, Pyrazole 288-13-1D, Pyrazole, derivative
 288-32-4, Imidazole, uses 288-32-4D, Imidazole, derivative
 288-88-0, 1H-1,2,4-Triazole 670-96-2, 2-Phenylimidazole
 20154-03-4, 3-Trifluoromethylpyrazole 25232-42-2,
 Polyvinylimidazole 37306-44-8, Triazole 37306-44-8D, Triazole, derivative
 420784-28-7, 1H-Indole trimer
 652968-46-2 652968-47-3 652968-48-4

RL: DEV (Device component use); USES (Uses)

(electrode for electrochem. cell like secondary battery and elec. double layer capacitor)

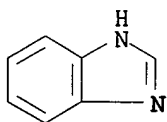
IT 51-17-2, Benzimidazole 51-17-2D, Benzimidazole, derivative
 288-13-1, Pyrazole 288-13-1D, Pyrazole, derivative
 288-32-4, Imidazole, uses 288-32-4D, Imidazole, derivative
 288-88-0, 1H-1,2,4-Triazole 670-96-2, 2-Phenylimidazole
 20154-03-4, 3-Trifluoromethylpyrazole 25232-42-2,
 Polyvinylimidazole 420784-28-7, 1H-Indole
 trimer 652968-46-2 652968-48-4

RL: DEV (Device component use); USES (Uses)

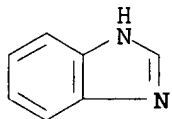
(electrode for electrochem. cell like secondary battery and elec. double layer capacitor)

RN 51-17-2 HCAPLUS

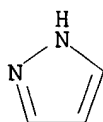
CN 1H-Benzimidazole (9CI) (CA INDEX NAME)



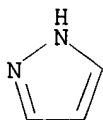
RN 51-17-2 HCAPLUS
CN 1H-Benzimidazole (9CI) (CA INDEX NAME)



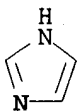
RN 288-13-1 HCAPLUS
CN 1H-Pyrazole (9CI) (CA INDEX NAME)



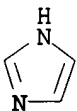
RN 288-13-1 HCAPLUS
CN 1H-Pyrazole (9CI) (CA INDEX NAME)



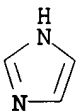
RN 288-32-4 HCAPLUS
CN 1H-Imidazole (9CI) (CA INDEX NAME)

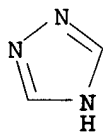


RN 288-32-4 HCAPLUS
CN 1H-Imidazole (9CI) (CA INDEX NAME)

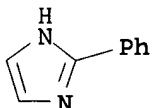


RN 288-88-0 HCAPLUS
CN 1H-1,2,4-Triazole (7CI, 9CI) (CA INDEX NAME)

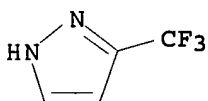




RN 670-96-2 HCAPLUS
CN 1H-Imidazole, 2-phenyl- (9CI) (CA INDEX NAME)



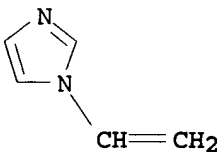
RN 20154-03-4 HCAPLUS
CN 1H-Pyrazole, 3-(trifluoromethyl)- (9CI) (CA INDEX NAME)



RN 25232-42-2 HCAPLUS
CN 1H-Imidazole, 1-ethenyl-, homopolymer (9CI) (CA INDEX NAME)

CM 1

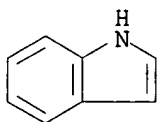
CRN 1072-63-5
CMF C5 H6 N2



RN 420784-28-7 HCAPLUS
CN 1H-Indole, trimer (9CI) (CA INDEX NAME)

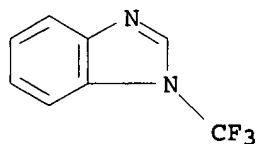
CM 1

CRN 120-72-9
CMF C8 H7 N



RN 652968-46-2 HCAPLUS

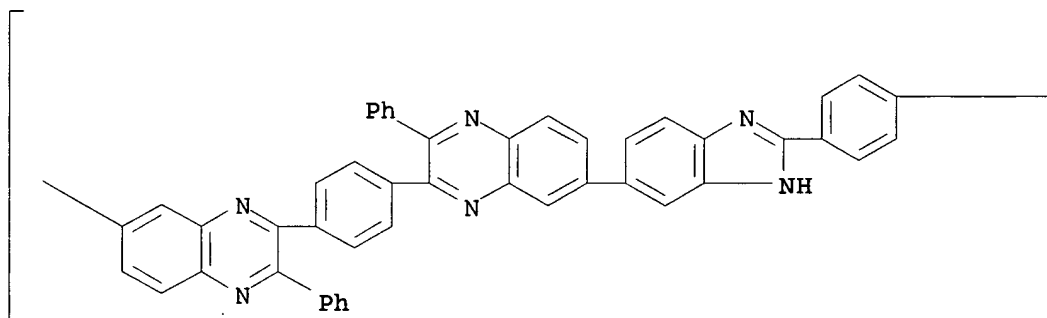
CN 1H-Benzimidazole, 1-(trifluoromethyl)- (9CI) (CA INDEX NAME)



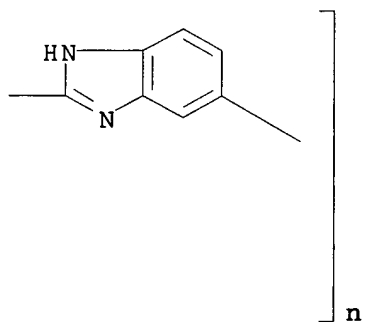
RN 652968-48-4 HCAPLUS

CN Poly[(3-phenyl-7,2-quinoxalinediyl)-1,4-phenylene(3-phenyl-2,7-quinoxalinediyl)-1H-benzimidazole-5,2-diyl-1,4-phenylene-1H-benzimidazole-2,5-diyl] (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 1-B



L57 ANSWER 17 OF 33 HCAPLUS COPYRIGHT 2006 ACS on STN

AN 2004:57897 HCAPLUS

DN 140:131078

TI Electrode for secondary battery, its manufacture and the battery

IN Koyama, Hiroshi

PA Toyota Motor Corp., Japan

SO Jpn. Kokai Tokkyo Koho, 12 pp.

CODEN: JKXXAF

DT Patent
LA Japanese
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2004022294	A2	20040122	JP 2002-174550	20020614
PRAI	JP 2002-174550		20020614		

AB The electrode is manufactured by preparing an electrode paste containing an active mass and an ordinary-temperature molten salt; and forming an active mass layer by using the paste. The electrode has an active mass layer containing an active mass and an ordinary-temperature molten salt; where the particle pores of the active mass are debubbled. The battery has an ordinary-temperature molten salt based electrolyte layer between a cathode and an anode; where the cathode and/or the anode uses the above electrode.

IC ICM H01M004-02

ICS H01M004-62; H01M010-40

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)

IT 25013-01-8, Polypyridine 90076-65-6

174899-82-2

RL: DEV (Device component use); USES (Uses)

(manufacture of **electrodes** containing ordinary-temperature molten salts for secondary batteries)

IT 25013-01-8, Polypyridine 174899-82-2

RL: DEV (Device component use); USES (Uses)

(manufacture of **electrodes** containing ordinary-temperature molten salts for secondary batteries)

RN 25013-01-8 HCAPLUS

CN Pyridine, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 110-86-1

CMF C5 H5 N



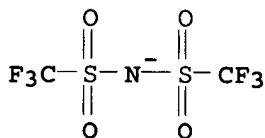
RN 174899-82-2 HCAPLUS

CN 1H-Imidazolium, 1-ethyl-3-methyl-, salt with 1,1,1-trifluoro-N-
[(trifluoromethyl)sulfonyl]methanesulfonamide (1:1) (9CI) (CA INDEX NAME)

CM 1

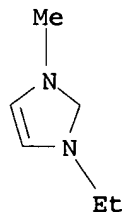
CRN 98837-98-0

CMF C2 F6 N O4 S2



CM 2

CRN 65039-03-4
CMF C6 H11 N2



ONE OR MORE TAUTOMERIC DOUBLE BONDS NOT DISPLAYED IN THE STRUCTURE

L57 ANSWER 18 OF 33 HCAPLUS COPYRIGHT 2006 ACS on STN

AN 2003:875559 HCAPLUS

DN 139:367552

TI Multilayered electrolyte-electrode membrane assemblies containing mineral acids, basic polymers, and a cation exchange-type barrier coating

IN Uensal, Oemer; Kiefer, Joachim

PA Celanese Ventures GmbH, Germany; Pemeas GmbH

SO PCT Int. Appl., 49 pp.

CODEN: PIXXD2

DT Patent

LA German

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2003092090	A2	20031106	WO 2003-EP4117	20030422
	WO 2003092090	A3	20050120		
	W: BR, CA, CN, JP, KR, MX, US				
	RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR				
	DE 10218368	A1	20031106	DE 2002-10218368	20020425
	DE 10218367	A1	20031113	DE 2002-10218367	20020425
	CA 2483015	AA	20031106	CA 2003-2483015	20030422
	EP 1518282	A2	20050330	EP 2003-718780	20030422
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, FI, RO, CY, TR, BG, CZ, EE, HU, SK				
	US 2005181254	A1	20050818	US 2003-512264	20030422
	JP 2005527948	T2	20050915	JP 2004-500346	20030422
PRAI	DE 2002-10218367	A	20020425		
	DE 2002-10218368	A	20020425		
	WO 2003-EP4117	W	20030422		

AB Proton-conducting multi-layered electrolyte membranes for fuel cells are characterized by at least one mineral acid-doped or mineral acid-containing flat surfaces and a barrier layer for the other layer, which, together, make up a membrane **electrode** assembly. Preferred mineral acids include H₃PO₄, H₂SO₄, and polyphosphoric acids. The barrier layer, which preferably consists of a cation exchanger with cation-exchange capacity <0.9 meq/g and a proton conductivity <0.06 S/cm, has a thickness of 10-30 μm (preferably <10 μm). The flat surfaces of the membrane consist of a basic polymer (or a basic polymer integrated with a second polymer or an inert support), selected from polyimidazoles, polybenzimidazoles, polybenzthiazoles, polybenzoxazoles, polytriazoles, polyoxadiazoles, polythiadiazoles, polypyrazoles, **polyquinoxalines**, **polypyridines**, **polypyrimidines**, or

poly(tetraazapyrenes). Such multilayer electrolyte membranes prevents mineral acid from being washed out and reduces the overvoltage on the cathode.

IC ICM H01M

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)

Section cross-reference(s): 38

IT Polybenzimidazoles

Polybenzothiazoles

Polybenzoxazoles

Polyoxadiazoles

Polyquinoxalines

RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)

(membranes; multilayered electrolyte-electrode membrane assemblies containing mineral acids, basic polymers, and a cation exchange-type barrier coating)

IT 110-86-1D, Pyridine, derivs., polymers 288-13-1D, Pyrazole,

derivs., polymers 288-88-0D, 1H-1,2,4-Triazole, derivs.,

polymers 289-06-5D, Thiadiazole, derivs., polymers 289-95-2D,

Pyrimidine, derivs., polymers 7258-75-5D, Pyrimido[4,5,6-gh]perimidine,

1,6-dihydro-, derivs., polymers 27380-27-4D, Pek, sulfonated

RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)

(membranes; multilayered electrolyte-electrode membrane assemblies containing mineral acids, basic polymers, and a cation exchange-type barrier coating)

IT 288-13-1D, Pyrazole, derivs., polymers 288-88-0D,

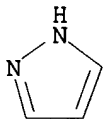
1H-1,2,4-Triazole, derivs., polymers

RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)

(membranes; multilayered electrolyte-electrode membrane assemblies containing mineral acids, basic polymers, and a cation exchange-type barrier coating)

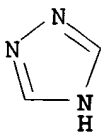
RN 288-13-1 HCAPLUS

CN 1H-Pyrazole (9CI) (CA INDEX NAME)



RN 288-88-0 HCAPLUS

CN 1H-1,2,4-Triazole (7CI, 9CI) (CA INDEX NAME)



L57 ANSWER 19 OF 33 HCAPLUS COPYRIGHT 2006 ACS on STN

AN 2003:675770 HCAPLUS

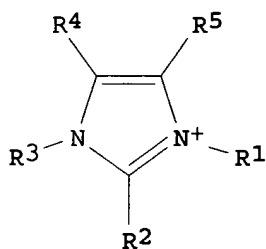
DN 139:216906

TI Electrochemical apparatus

IN Fuchigami, Kazuo; Atobe, Masato; Ishii, Hideki; Sekiguchi, Kei; Takada,

Naokado
 PA Central Glass Co., Ltd., Japan
 SO Jpn. Kokai Tokkyo Koho, 7 pp.
 CODEN: JKXXAF
 DT Patent
 LA Japanese
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2003243028	A2	20030829	JP 2002-36172	20020214
PRAI	JP 2002-36172		20020214		
GI					



AB The apparatus, e.g., batteries, double layer capacitors, electrochromic display devices, has an ion conductor between a cathode and an anode; where conducting polymers are used for either or both **electrodes** are, and an ionic liquid is used for the ion conductor. The conducting polymer is selected from **polypyrrole**, **polythiophene**, and their derivs.; and the ionic liquid contains anions of formula: $[CxF_{2x+1}SO_3]^-$, $[N(SO_2CxF_{2x+1})(SO_2CyF_{2y+1})]^-$, $[C(SO_2CxF_{2x+1})(SO_2CyF_{2y+1})(SO_2CzF_{2z+1})]^-$ (x, y, and z = an integer of 1-8) and cations I (R1-5 = H or C1-20 alkyl groups).

IC ICM H01M010-40

ICS H01G009-058; H01M004-02; H01M004-60

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
 Section cross-reference(s): 74, 76

IT 25233-34-5, **Polythiophene 30604-81-0**,

Polypyrrole 145022-44-2 268536-05-6

RL: DEV (Device component use); USES (Uses)

(lithium fluorocarbonsulfonate electrolyte and conducting polymer **electrodes** for electrochem. devices)

IT **30604-81-0, Polypyrrole 145022-44-2**

RL: DEV (Device component use); USES (Uses)

(lithium fluorocarbonsulfonate electrolyte and conducting polymer **electrodes** for electrochem. devices)

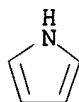
RN 30604-81-0 HCAPLUS

CN 1H-Pyrrole, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 109-97-7

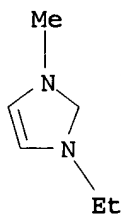
CMF C4 H5 N



RN 145022-44-2 HCAPLUS
CN 1H-Imidazolium, 1-ethyl-3-methyl-, salt with trifluoromethanesulfonic acid
(1:1) (9CI) (CA INDEX NAME)

CM 1

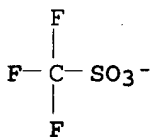
CRN 65039-03-4
CMF C6 H11 N2



ONE OR MORE TAUTOMERIC DOUBLE BONDS NOT DISPLAYED IN THE STRUCTURE

CM 2

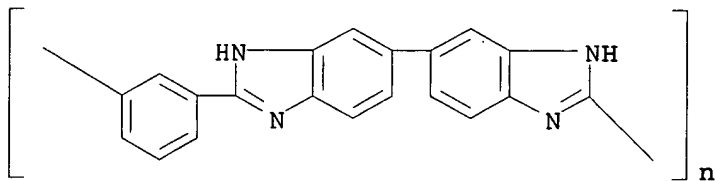
CRN 37181-39-8
CMF C F3 O3 S



L57 ANSWER 20 OF 33 HCAPLUS COPYRIGHT 2006 ACS on STN
AN 2003:56660 HCAPLUS
DN 138:129733
TI Acid-base blend polymer electrolytes, their use in electrolyte membranes,
and membrane/electrode assemblies
IN Kitamura, Kota; Sakaguchi, Yoshimitsu
PA Toyobo Co., Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 11 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
FAN.CNT 1
PATENT NO. KIND DATE APPLICATION NO. DATE
PI JP 2003022824 A2 20030124 JP 2001-208226 20010709
PRAI JP 2001-208226 20010709
GI

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

- AB The electrolytes contain acidic polymers and basic polymers, wherein the acidic polymers are shown as $[Ar1Ar2]_{n1}[Ar3Ar4]_{m1}$ [the repeating units are connected in random or block; Ar1, Ar3 = I-VI; X1, X2 = O, S; Y = O, S, CO, CH2, CMe2, SO2; Ar2 = acidic group-containing divalent aromatic residue; Ar4 = C6H4, C10H6, (C6H4)2, C6H4SO2C6H4, C6H4COC6H4, C6H4OC6H4, C6H4CH2C6H4, C6H4CMe2C6H4, C6H4SC6H4; n1 = 1-10,000; m1 = 0-10,000] or VII (the repeating units are connected in random or block; X3, X4 = S, O; Z = SO3H, PO3H2, their salt; q = 1-3; n2 = 1-10,000; m2 = 0-10,000). The basic polymers may be 2-vinylpyridine polymers, 4-vinylpyridine polymers, polybenzimidazoles, polyquinolines, and/or **polyquinoxalines**. The claimed electrolyte membranes contain the blend polymer electrolytes as main components. The membrane/**electrode** assemblies contain the blend polymer electrolyte membranes in membrane and/or **electrode** layers. The electrolytes have high ion conductivity and durability and are suitable for fuel cell proton exchange membranes, binders in membrane/**electrode** assemblies, etc.
- IC ICM H01M008-02
ICS C08L039-08; C08L079-08; H01B001-06; H01B001-12; H01M008-10
- CC 76-2 (Electric Phenomena)
Section cross-reference(s): 38, 52
- IT Polybenzimidazoles
Polyquinolines
Polyquinoxalines
RL: TEM (Technical or engineered material use); USES (Uses)
(basic component; acid-base blend polymer electrolytes containing acidic benzoxazole or benzothiazole polymers for electrolyte membranes and membrane/**electrode** assemblies)
- IT 25232-41-1, Poly(4-vinylpyridine) 25584-58-1, Poly(p-phenylenebenzobisimidazole) 25734-65-0, Poly(2,2'-(m-phenylene)-5,5'-bibenzimidazole)
RL: TEM (Technical or engineered material use); USES (Uses)
(basic component; acid-base blend polymer electrolytes containing acidic benzoxazole or benzothiazole polymers for electrolyte membranes and membrane/**electrode** assemblies)
- IT 25734-65-0, Poly(2,2'-(m-phenylene)-5,5'-bibenzimidazole)
RL: TEM (Technical or engineered material use); USES (Uses)
(basic component; acid-base blend polymer electrolytes containing acidic benzoxazole or benzothiazole polymers for electrolyte membranes and membrane/**electrode** assemblies)
- RN 25734-65-0 HCAPLUS
- CN Poly([5,5'-bi-1H-benzimidazole]-2,2'-diyl-1,3-phenylene) (9CI) (CA INDEX NAME)



AN 2002:879236 HCAPLUS
DN 138:162684
TI Pulsed amperometric detection of underivatized amino acids using
polypyrrole modified copper **electrode** in acidic solution
AU Deore, Bhavana A.; Shiigi, Hiroshi; Nagaoka, Tsutomu
CS Faculty of Engineering, Department of Applied Chemistry, Yamaguchi
University, Ube, 755-8611, Japan
SO Talanta (2002), 58(6), 1203-1211
CODEN: TLNTA2; ISSN: 0039-9140
PB Elsevier Science B.V.
DT Journal
LA English
AB The successful pulsed amperometric detection of underivatized amino acids
were carried out in an acidic media on a **polypyrrole** (PPy)
modified Cu **electrode**. The formation of PPy film doped with
glutamate (glu) on a Cu **electrode** surface changes the mechanism
of Cu dissoln. After application of multistep potential waveform, the PPy
film was glu free due to the electro-reduction and overoxidn. High anodic
potential polarization treatment yielded partially overoxidized PPy film
as long as the Cu surface dissoln. and amino acid permeation through the
film was well controlled. This overoxidized PPy film acted as a charge
and size exclusion barrier to improve the selectivity and stability of a
Cu **electrode**. Various process parameters such as film
modification time, detection and cleaning potential and pH of solution were
optimized to maximize the beneficial electrocatalytic properties of the
electrode surface. At an optimized condition, detection limits
for pos. charged histidine and arginine are 19 and 22 pg, resp., whereas
the neutral amino acids detected in amts. of 0.9-2.3 ng. Also, the PPy
coated Cu **electrode** response was long lived, stable and
reproducible.
CC 80-2 (Organic Analytical Chemistry)
Section cross-reference(s): 72
ST amino acid detection pulsed amperometry **polypyrrole** modified
copper **electrode**
IT **Electrodes**
(amperometric; pulsed amperometric detection of underivatized amino
acids using **polypyrrole** modified copper **electrode**
in acidic solution)
IT Amino acids, analysis
RL: ANT (Analyte); ANST (Analytical study)
(analytes; pulsed amperometric detection of underivatized amino acids
using **polypyrrole** modified copper **electrode** in
acidic solution)
IT Cleaning
(cathodic; pulsed amperometric detection of underivatized amino acids
using **polypyrrole** modified copper **electrode** in
acidic solution)
IT Amperometry
(pulsed; pulsed amperometric detection of underivatized amino acids
using **polypyrrole** modified copper **electrode** in
acidic solution)
IT 11070-68-1, Glutamate, analysis
RL: ARU (Analytical role, unclassified); MOA (Modifier or additive use);
ANST (Analytical study); USES (Uses)
(**polypyrrole** doped with; pulsed amperometric detection of
underivatized amino acids using **polypyrrole** modified copper
electrode in acidic solution)
IT 7440-50-8, Copper, analysis 30604-81-0D, **Polypyrrole**,
glutamate doped
RL: ARU (Analytical role, unclassified); DEV (Device component use); PRP

(Properties); ANST (Analytical study); USES (Uses)
(pulsed amperometric detection of underivatized amino acids using
polypyrrole modified copper **electrode** in acidic
solution)

IT 52-90-4, Cysteine, analysis 56-40-6, Glycine, analysis 56-41-7,
L-Alanine, analysis 56-86-0, Glutamic acid, analysis 61-90-5, Leucine,
analysis 63-91-2, Phenylalanine, analysis 71-00-1, Histidine,
analysis 72-18-4, Valine, analysis 72-19-5, Threonine, analysis
74-79-3, Arginine, analysis

RL: ARU (Analytical role, unclassified); MOA (Modifier or additive use);
ANST (Analytical study); USES (Uses)
(pulsed amperometric detection of underivatized amino acids using
polypyrrole modified copper **electrode** in acidic
solution)

IT 30604-81-0D, **Polypyrrole**, glutamate doped

RL: ARU (Analytical role, unclassified); DEV (Device component use); PRP
(Properties); ANST (Analytical study); USES (Uses)
(pulsed amperometric detection of underivatized amino acids using
polypyrrole modified copper **electrode** in acidic
solution)

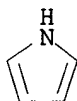
RN 30604-81-0 HCAPLUS

CN 1H-Pyrrole, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 109-97-7

CMF C4 H5 N



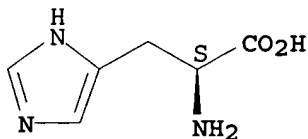
IT 71-00-1, Histidine, analysis

RL: ARU (Analytical role, unclassified); MOA (Modifier or additive use);
ANST (Analytical study); USES (Uses)
(pulsed amperometric detection of underivatized amino acids using
polypyrrole modified copper **electrode** in acidic
solution)

RN 71-00-1 HCAPLUS

CN L-Histidine (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (-).



RE.CNT 33 THERE ARE 33 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L57 ANSWER 22 OF 33 HCAPLUS COPYRIGHT 2006 ACS on STN

AN 1996:141968 HCAPLUS

DN 124:187810

TI Biomimetic catalysis in a heterogeneous phase. Model systems of cytochrome

P-450 using electrodes modified with manganese porphyrins

AU Gutierrez Granados, Silvia
CS Instituto Investigaciones Cientificas, Universidad Guanajuato, Mex.
SO Ciencia (Mexico City) (1995), 46(1), 121-36
CODEN: CIENA3; ISSN: 0366-6409
PB Academia de la Investigacion Cientifica
DT Journal; General Review
LA Spanish
AB A review with many refs. is given. Biomimetic systems based on synthetic metalloporphyrins that reconstitute the active site of cytochrome P 450 have been widely studied. The mol. O2 activation mechanism promotes electron exchange with the central metal ion, confirming the possibility of an electrochem. process. The catalytic process that involves porphyrins needs the participation of a reducing agent (either chemical or electrochem.), a co-catalyst (methylimidazole) and an activator (benzoic anhydride). The present work analyzes the use of modified **electrodes** in the mol. O2 electrochem. activation following the model of cytochrome P 450. Among the different types of **electrode** materials, **polypyrrole** allows the fixation of numerous metallic complexes, such as Mn porphyrin, on the **electrode** surface. These types of polymeric layers have been successfully used as catalysts in the electrochem. oxidation of diverse hydrocarbons on a preparative scale.

CC 72-0 (Electrochemistry)
Section cross-reference(s): 9, 67

IT 30604-81-0, **Polypyrrole**
RL: NUU (Other use, unclassified); PEP (Physical, engineering or chemical process); POF (Polymer in formulation); PROC (Process); USES (Uses) (biomimetic catalysis in heterogeneous phase and model systems of cytochrome P 450 using **electrodes** modified with manganese porphyrins with fixation by **polypyrrole**)

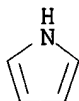
IT 30346-87-3, Methylimidazole
RL: CAT (Catalyst use); USES (Uses) (cocatalyst of methylimidazole biomimetic catalysis in heterogeneous phase and model systems of cytochrome P 450 using **electrodes** modified with manganese porphyrins)

IT 30604-81-0, **Polypyrrole**
RL: NUU (Other use, unclassified); PEP (Physical, engineering or chemical process); POF (Polymer in formulation); PROC (Process); USES (Uses) (biomimetic catalysis in heterogeneous phase and model systems of cytochrome P 450 using **electrodes** modified with manganese porphyrins with fixation by **polypyrrole**)

RN 30604-81-0 HCAPLUS
CN 1H-Pyrrole, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 109-97-7
CMF C4 H5 N

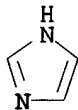


IT 30346-87-3, Methylimidazole
RL: CAT (Catalyst use); USES (Uses) (cocatalyst of methylimidazole biomimetic catalysis in heterogeneous phase and model systems of cytochrome P 450 using **electrodes**)

modified with manganese porphyrins)

RN 30346-87-3 HCAPLUS

CN 1H-Imidazole, methyl- (9CI) (CA INDEX NAME)



D1-Me

L57 ANSWER 23 OF 33 HCAPLUS COPYRIGHT 2006 ACS on STN

AN 1996:73327 HCAPLUS

DN 124:92699

TI Manufacture of a **polypyrrole** positive electrode
(cathode) for secondary batteries comprising an aluminum
chloride-containing molten salt as electrolyte and an aluminum anode

IN Bjerrum, Niels J.; Petrushina, Irina M.; Vestergaard, Bo; Hjuler, Hans
Aage; Berg, Rolf W.

PA Den.

SO Dan., 15 pp.

CODEN: DAXXAF

DT Patent

LA Danish

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	DK 170626	B1	19951113	DK 1993-1045	19930920
	DK 9301045	A	19950321		
PRAI	DK 1993-1045		19930920		

AB The **polypyrrole** electrodes are electrochem. activated
by pretreatment (doping) in an AlCl₃-containing molten salt electrolyte.
Addnl., the pretreatment electrolyte contains 1-methyl-3-ethyl-imidazolium
chloride (or derivs. thereof) and/or 1,4-dimethyl-1,2,4-triazolium
chloride (or derivs. thereof). The batteries may be operated at room
temperature or higher temperature, and permits more recharge cycles. A mixture of
polypyrrole powder 77, Teflon powder 12, and carbon black powder
11 weight% (as a suspension of Teflon and carbon black powder in Me₂CO) was
spread on a Pt foil. The coated foil was pretreated in a molten mixture of
1-methyl-3-ethyl-imidazolium chloride and AlCl₃.

IC ICM H01M004-60

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)

ST **polypyrrole** pos electrode secondary battery; Teflon
carbon black **polypyrrole** electrode;
methylethylimidazolium chloride electrode; dimethyltriazolium
chloride electrode

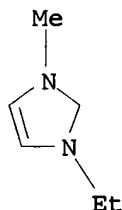
IT Carbon black, uses

RL: TEM (Technical or engineered material use); USES (Uses)
(admixts. with Teflon and **polypyrrole**; pretreatment of
polypyrrole-based pos. electrodes for improved
performance in secondary batteries comprising an aluminum
chloride-containing molten salt as electrolyte)

IT Batteries, secondary
Cathodes

(pretreatment of **polypyrrole**-based pos. electrodes)

- for improved performance in secondary batteries comprising an aluminum chloride-containing molten salt as electrolyte)
- IT 9002-84-0, Teflon
RL: TEM (Technical or engineered material use); USES (Uses)
(admixts. with carbon black and **polypyrrole**; pretreatment of **polypyrrole**-based pos. **electrodes** for improved performance in secondary batteries comprising an aluminum chloride-containing molten salt as electrolyte)
- IT 65039-09-0, 1-Methyl-3-ethyl-imidazolium chloride 136152-27-7
RL: TEM (Technical or engineered material use); USES (Uses)
(admixts. with molten aluminum chloride; pretreatment of **polypyrrole**-based pos. **electrodes** for improved performance in secondary batteries comprising an aluminum chloride-containing molten salt as electrolyte)
- IT 7446-70-0, Aluminum chloride, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(electrolyte; pretreatment of **polypyrrole**-based pos. **electrodes** for improved performance in secondary batteries comprising an aluminum chloride-containing molten salt as electrolyte)
- IT 30604-81-0, **Polypyrrole**
RL: TEM (Technical or engineered material use); USES (Uses)
(pretreatment of **polypyrrole**-based pos. **electrodes** for improved performance in secondary batteries comprising an aluminum chloride-containing molten salt as electrolyte)
- IT 65039-09-0, 1-Methyl-3-ethyl-imidazolium chloride
RL: TEM (Technical or engineered material use); USES (Uses)
(admixts. with molten aluminum chloride; pretreatment of **polypyrrole**-based pos. **electrodes** for improved performance in secondary batteries comprising an aluminum chloride-containing molten salt as electrolyte)
- RN 65039-09-0 HCAPLUS
CN 1H-Imidazolium, 1-ethyl-3-methyl-, chloride (9CI) (CA INDEX NAME)

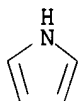


● Cl⁻

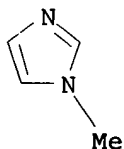
ONE OR MORE TAUTOMERIC DOUBLE BONDS NOT DISPLAYED IN THE STRUCTURE

- IT 30604-81-0, **Polypyrrole**
RL: TEM (Technical or engineered material use); USES (Uses)
(pretreatment of **polypyrrole**-based pos. **electrodes** for improved performance in secondary batteries comprising an aluminum chloride-containing molten salt as electrolyte)
- RN 30604-81-0 HCAPLUS
CN 1H-Pyrrole, homopolymer (9CI) (CA INDEX NAME)
- CM 1
- CRN 109-97-7

CMF C4 H5 N

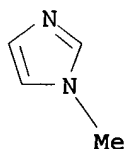


L57 ANSWER 24 OF 33 HCAPLUS COPYRIGHT 2006 ACS on STN
AN 1994:176116 HCAPLUS
DN 120:176116
TI Electroanalytical study of the activation of dioxygen in acetonitrile solution by manganese porphyrin films deposited onto carbon electrodes
AU Gutierrez-Granados, Silvia; Bedioui, Fethi; Devynck, Jacques
CS Lab. Electrochim., Ec. Natl. Super. Chim. Paris, Paris, 75231, Fr.
SO Electrochimica Acta (1993), 38(13), 1747-51
CODEN: ELCAAV; ISSN: 0013-4686
DT Journal
LA English
AB Electrochem. anal. of the activation of dioxygen in aprotic solns. (acetonitrile) by manganese porphyrin polymer films was studied by rotating disk **electrode** voltammetry. In the presence of a benzoic anhydride electrophile, the electrocatalytic reduction of O₂ occurs by a process postulated to involve a high-valent manganese-oxo porphyrin according to a same scheme already described for the metalloporphyrin dissolved in solution This anal. shows that thin **polypyrrole** -manganese porphyrin films do not induce a limitation due to the diffusion of O₂ and other reagents through the polymer during the electrocatalytic activation of dioxygen.
CC 72-2 (Electrochemistry)
Section cross-reference(s): 36, 67, 78
IT 93-97-0, Benzoic anhydride **616-47-7**, 1-Methyl imidazole
RL: PRP (Properties)
(electrocatalytic reduction of oxygen on carbon **electrode** with (pyrrolylphenyl)tritolylporphyrinato complex polymer film in acetonitrile containing)
IT **616-47-7**, 1-Methyl imidazole
RL: PRP (Properties)
(electrocatalytic reduction of oxygen on carbon **electrode** with (pyrrolylphenyl)tritolylporphyrinato complex polymer film in acetonitrile containing)
RN 616-47-7 HCAPLUS
CN 1H-Imidazole, 1-methyl- (9CI) (CA INDEX NAME)

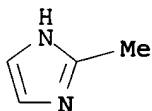


L57 ANSWER 25 OF 33 HCAPLUS COPYRIGHT 2006 ACS on STN
AN 1993:612806 HCAPLUS
DN 119:212806
TI Poly(pyrrole-manganese porphyrin): a catalytic electrode material as a model system for olefin epoxidation and drug metabolism with molecular

- oxygen
- AU Cauquis, G.; Cosnier, S.; Deronzier, A.; Galland, B.; Limosin, D.; Moutet, J. C.; Bizot, J.; Deprez, D.; Pulicani, J. P.
- CS Lab. Electrochim. Org. Photochim. Redox, Univ. Joseph Fourier Grenoble 1, Grenoble, 38041, Fr.
- SO Journal of Electroanalytical Chemistry (1993), 352(1-2), 181-95
CODEN: JECHES; ISSN: 0368-1874
- DT Journal
- LA English
- AB The oxidative electropolymerization of 3 pyrrole-substituted Mn tetraphenylporphyrins can be used to coat Pt or C electrodes with polymeric films able to catalyze the epoxidation of cyclooctene and stilbene with mol. O. Cross-linked polymers prepared from monomers containing 2 or 3 pyrrole groups, and thus having a better polymerizability, present a lower activity than the polymeric films synthesized from the monomer containing only 1 pyrrole moiety. Confinement of the catalyst on the electrode surface markedly improves its stability compared with that of homogeneous electrocatalytic systems. This catalytic electrode material was successfully applied to the preparation of oxidized metabolites of a drug.
- CC 72-2 (Electrochemistry)
Section cross-reference(s): 22, 63, 78
- ST **polypyrrole** manganese porphyrin catalytic **electrode**
epoxidation; drug metab mol oxygen olefin epoxidation
- IT 616-47-7, 1-Methylimidazole 693-98-1, 2-Methylimidazole
RL: PRP (Properties)
(in epoxidation of cyclooctene and stilbene on catalytic **electrodes** coated with poly(pyrrole-manganese porphyrin))
- IT 616-47-7, 1-Methylimidazole 693-98-1, 2-Methylimidazole
RL: PRP (Properties)
(in epoxidation of cyclooctene and stilbene on catalytic **electrodes** coated with poly(pyrrole-manganese porphyrin))
- RN 616-47-7 HCAPLUS
- CN 1H-Imidazole, 1-methyl- (9CI) (CA INDEX NAME)



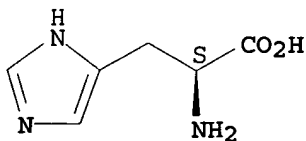
- RN 693-98-1 HCAPLUS
- CN 1H-Imidazole, 2-methyl- (9CI) (CA INDEX NAME)



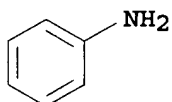
- L57 ANSWER 26 OF 33 HCAPLUS COPYRIGHT 2006 ACS on STN
- AN 1993:490387 HCAPLUS
- DN 119:90387
- TI Selectivity of conducting polymer electrodes and their application in flow injection analysis of amino acids
- AU Cooper, J. C.; Haemmerle, M.; Schuhmann, W.; Schmidt, H. L.
- CS Lehrstuhl Allg. Chem. Biochem., Tech. Univ. Munchen, Freising-

Weißenstephan, (W)-8050, Germany
SO Biosensors & Bioelectronics (1993), 8(1), 65-74
CODEN: BBIOE4; ISSN: 0956-5663
DT Journal
LA English
AB The size-exclusion properties of conducting polymer modified **electrodes** depend on the polymer morphol. and thickness. By controlling the polymerization conditions, polymer modified **electrodes** can be produced that prevent access of certain small redox mols. to the **electrode** surface, whilst permitting oxidation of anal. relevant hydrogen peroxide to take place. Such polymer **electrodes** find application in amperometric detection of amino acids. Certain amino acids are electroactive and are oxidized directly on the **electrode** surface at the potential required for measurements. Polymer modification of the **electrode** enables direct amino acid oxidation, and associated **electrode** fouling effects, to be suppressed. The size exclusion properties of **polyaniline** and **polypyrrole** were compared by investigating oxidation of hydrogen peroxide and electroactive amino acids at such polymer modified **electrodes**. **Polyaniline** was found to be more effective than **polypyrrole** at suppressing direct amino acid oxidation. A **polyaniline electrode**, which permitted oxidation of hydrogen peroxide but prevented direct amino acid oxidation, was used together with L-amino acid oxidase immobilized on an enzyme column for measurement of electroactive amino acids. Whereas the response at a bare platinum **electrode** decreased significantly during the measurement, the response of a 700 mC cm⁻² **polyaniline electrode** remained almost constant, indicating that **electrode** fouling was practically eliminated.
CC 9-1 (Biochemical Methods)
IT Permeability and Permeation
(of **polyaniline** and **polypyrrole**, flow injection anal. of amino acids by **electrodes** in relation to)
IT 52-90-4, Cysteine, analysis 60-18-4, Tyrosine, analysis 63-68-3, Methionine, analysis 71-00-1, Histidine, analysis 73-22-3, Tryptophan, analysis
RL: ANT (Analyte); ANST (Analytical study)
(determination of, by flow injection anal. with conducting polymer **electrodes**, polymer selectivity in relation to)
IT 25233-30-1, **Polyaniline** 30604-81-0, **Polypyrrole**
RL: ANST (Analytical study)
(**electrode** modified with, flow injection anal. of amino acids with, polymer permeability properties in relation to)
IT 71-00-1, Histidine, analysis
RL: ANT (Analyte); ANST (Analytical study)
(determination of, by flow injection anal. with conducting polymer **electrodes**, polymer selectivity in relation to)
RN 71-00-1 HCAPLUS
CN L-Histidine (9CI) (CA INDEX NAME)

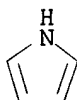
Absolute stereochemistry. Rotation (-).



IT 25233-30-1, Polyaniline 30604-81-0,
Polypyrrole
RL: ANST (Analytical study)
(electrode modified with, flow injection anal. of amino acids
with, polymer permeability properties in relation to)
RN 25233-30-1 HCAPLUS
CN Benzenamine, homopolymer (9CI) (CA INDEX NAME)
CM 1
CRN 62-53-3
CMF C6 H7 N



RN 30604-81-0 HCAPLUS
CN 1H-Pyrrole, homopolymer (9CI) (CA INDEX NAME)
CM 1
CRN 109-97-7
CMF C4 H5 N



L57 ANSWER 27 OF 33 HCAPLUS COPYRIGHT 2006 ACS on STN
AN 1992:493801 HCAPLUS
DN 117:93801
TI Secondary batteries with polymer electrodes
IN Yoshinaga, Noryuki; Fujimoto, Masahisa; Furukawa, Sanehiro
PA Sanyo Denki K. K., Japan
SO Jpn. Kokai Tokkyo Koho, 7 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 04104477	A2	19920406	JP 1990-222005	19900822
	JP 3108082	B2	20001113		
PRAI	JP 1990-222005		19900822		

AB In batteries use conducting polymer anodes and/or cathodes and N-containing compds. as electrolyte solvents. The compds. are selected from pyrrolidone, pyrrolidine, pyrroline, pyrazole, pyrazolidine, imidazole, triazole, tetrazole, and their derivs. These batteries have high capacity.

IC ICM H01M010-40
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
IT 25233-30-1, Polyaniline 25233-34-5,

Polythiophene 30604-81-0, Polypyrrole

RL: USES (Uses)

(electrodes, batteries with, nitrogen-containing compds. as electrolyte solvents for)

IT 123-75-1, Pyrrolidine, uses 288-13-1, Pyrazole 288-32-4
, Imidazole, uses 288-94-8, 1H-Tetrazole 504-70-1, Pyrazolidine
616-45-5, Pyrrolidone 638-31-3, 2-Pyrroline 872-50-4,
N-Methyl-2-pyrrolidone, uses 28350-87-0, Pyrroline 37306-44-8,
Triazole

RL: USES (Uses)

(electrolyte solvent, for batteries with polymer electrodes)

IT 25233-30-1, Polyaniline 30604-81-0,

Polypyrrole

RL: USES (Uses)

(electrodes, batteries with, nitrogen-containing compds. as electrolyte solvents for)

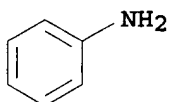
RN 25233-30-1 HCAPLUS

CN Benzenamine, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 62-53-3

CMF C6 H7 N



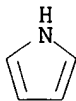
RN 30604-81-0 HCAPLUS

CN 1H-Pyrrole, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 109-97-7

CMF C4 H5 N



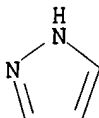
IT 288-13-1, Pyrazole 288-32-4, Imidazole, uses

RL: USES (Uses)

(electrolyte solvent, for batteries with polymer electrodes)

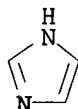
RN 288-13-1 HCAPLUS

CN 1H-Pyrazole (9CI) (CA INDEX NAME)



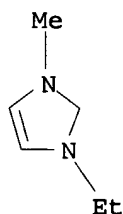
RN 288-32-4 HCAPLUS

CN 1H-Imidazole (9CI) (CA INDEX NAME)



L57 ANSWER 28 OF 33 HCAPLUS COPYRIGHT 2006 ACS on STN
AN 1992:183388 HCAPLUS
DN 116:183388
TI Simultaneous EPR and electrochemical measurements on polyaniline in ambient temperature molten salts
AU Tang, J.; Allendoerfer, R. D.; Osteryoung, R. A.
CS Dep. Chem., State Univ. New York, Buffalo, NY, 14214, USA
SO Journal of Physical Chemistry (1992), 96(8), 3531-6
CODEN: JPCHAX; ISSN: 0022-3654
DT Journal
LA English
AB Simultaneous EPR and electrochem. measurements have been carried out on polyaniline (PAN) prepared by monomer oxidation in an acidic aqueous solution and investigated in an ambient temperature ionic liquid, which consists of a mixture of aluminum chloride and 1-methyl-3-ethylimidazolium chloride. The maximum EPR response was found at the point where half the total observed charge had been passed in both cyclic voltammetry and potential step expts. A one-to-one relationship between the number of spins observed and the number of electrons removed was found to .apprx.25% of full oxidation Expts. are explained in terms of two unresolved one-electron steps, with a thermodyn. comproportionation equilibrium among the neutral, polaron, and bipolaron states. The equilibrium constant K_{com} of the reduced form, α , and of the oxidized form, β , changes with the conductivity and ionic environment of the film. The bipolaron is favored in the initial doping process, and the polaron is dominant in the final doping stage. The EPR response of the polaron decays with a half-life between 8 and 17 s.
CC 72-2 (Electrochemistry)
Section cross-reference(s): 36, 77
ST reaction electrochem **polyaniline** ESR chloroaluminate melt; oxidn
electrochem **polyaniline** ESR chloroaluminate melt; redn
electrochem **polyaniline** ESR chloroaluminate melt; bipolaron
formation **polyaniline electrode** chloroaluminate melt;
cond **polyaniline electrode** melt equal const; aluminum
methylethylimidazolium chloride melt **polyaniline electrode**
IT Spin, electronic
(in **polyaniline electrode**)
IT Electron spin resonance
(of **polyaniline electrode** in aluminum
chloride-methylethylimidazolium chloride melt, electrochem. reactions
in relation to)
IT Electric conductivity and conduction
(of **polyaniline electrode** in aluminum
chloride-methylethylimidazolium chloride melt, equilibrium constant in
relation to)
IT Polaron
(di-, formation of, in **polyaniline electrode** in
aluminum chloride-methylethylimidazolium chloride melt)
IT 65039-09-0, 1-Methyl-3-ethylimidazolium chloride
RL: PRP (Properties)

(ESR and electrochem. reactions of **polyaniline electrode** in aluminum chloride melt with)
IT 7446-70-0, Aluminum chloride, properties
RL: PRP (Properties)
(ESR and electrochem. reactions of **polyaniline electrode** in methylethylimidazolium chloride melt with)
IT 65039-09-0, 1-Methyl-3-ethylimidazolium chloride
RL: PRP (Properties)
(ESR and electrochem. reactions of **polyaniline electrode** in aluminum chloride melt with)
RN 65039-09-0 HCAPLUS
CN 1H-Imidazolium, 1-ethyl-3-methyl-, chloride (9CI) (CA INDEX NAME)



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ONE OR MORE TAUTOMERIC DOUBLE BONDS NOT DISPLAYED IN THE STRUCTURE

L57 ANSWER 29 OF 33 HCAPLUS COPYRIGHT 2006 ACS on STN
AN 1991:642361 HCAPLUS
DN 115:242361
TI Electroassisted oxidation of cis-cyclooctene and adamantane by molecular oxygen catalyzed by polypyrrole manganese porphyrin films
AU Bedioui, F.; Gutierrez Granados, S.; Gaillon, L.; Bied-Charreton, C.; Devynck, J.
CS Lab. Electrochim., Ec. Natl. Super. Chim., Paris, 75231, Fr.
SO Studies in Surface Science and Catalysis (1991), 66 (Dioxygen Act. Homogeneous Catal. Oxid.), 221-8
CODEN: SSCTDM; ISSN: 0167-2991
DT Journal
LA English
AB The electrochem. polymerization of pyrrole-substituted manganese porphyrin complex on carbon and graphite electrodes was performed in acetonitrile solution. The redox and catalytic properties of the polymer films were examined by cyclic voltammetry. Electroassisted oxidation reactions of cis-cyclooctene and adamantane with mol. oxygen, under atmospheric pressure, in acetonitrile and dichloromethane solns. are described using the manganese porphyrin-coated electrodes as catalysts. One remarkable aspect of the results is the large activity of the porphyrin catalyst when it is attached on the electrode.
CC 72-2 (Electrochemistry)
Section cross-reference(s): 22, 36, 78
IT Oxidation catalysts
(electrochem., **polypyrrole** manganese porphyrin films on carbon and graphite **electrode**, for cyclooctene and adamantane)
IT 616-47-7, 1-Methylimidazole
RL: PRP (Properties)

(cyclic voltammetry of vitreous carbon disk **electrode** coated with film of **polypyrrole**-manganese porphyrin in acetonitrile containing)

IT 93-97-0

RL: PRP (Properties)

(cyclic voltammetry of vitreous carbon disk **electrode** coated with film of **polypyrrole**-manganese porphyrin in solution containing methylimidazole and)

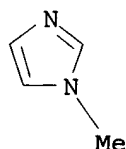
IT 616-47-7, 1-Methylimidazole

RL: PRP (Properties)

(cyclic voltammetry of vitreous carbon disk **electrode** coated with film of **polypyrrole**-manganese porphyrin in acetonitrile containing)

RN 616-47-7 HCAPLUS

CN 1H-Imidazole, 1-methyl- (9CI) (CA INDEX NAME)



L57 ANSWER 30 OF 33 HCAPLUS COPYRIGHT 2006 ACS on STN

AN 1991:586737 HCAPLUS

DN 115:186737

TI Polyaniline batteries

IN Koura, Nobuyuki; Ejiri, Yoichi

PA Japan

SO Jpn. Kokai Tokkyo Koho, 3 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 03074052	A2	19910328	JP 1989-207891	19890814
PRAI	JP 1989-207891		19890814		

AB Primary and secondary batteries use **polyaniline** prepared from a room-temperature molten-salt bath containing aniline for their **electrodes**. The molten salt may be a mixture of 1-butylpyridinium chloride, N-containing 6-membered ring alkyl halide, and Al halide or, for the preparation of **polyaniline** for cathodes, a mixture containing 1-ethyl-3-methylimidazolium chloride, N-containing 5-membered ring alkyl halide, Al halide, and optionally an organic solvent or halides of alkali and alkaline earth metals. When both **electrodes** are from **polyaniline**, the batteries are divided by a separator or an ion-exchange membrane into a cathode chamber and an anode chamber, and preferably use acidic and alkaline room-temperature molten salts for catholyte and anolyte, resp.

IC ICM H01M004-04

ICS H01M010-40

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)

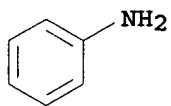
Section cross-reference(s): 38

ST battery **polyaniline electrode**; **polyaniline****electrode** synthesis molten salt; butylpyridinium chloride**polyaniline electrode** synthesis; ethylmethylimidazoliumchloride **polyaniline electrode** synthesis; aluminumhalide **polyaniline electrode** synthesis; heterocyclic

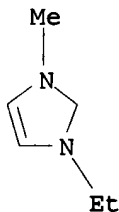
halide polyaniline electrode synthesis
IT **Electrodes**
(battery, polyaniline for, manufacture of, by electropolymn. in
room-temperature molten-salt bath)
IT **25233-30-1P, Polyaniline**
RL: PREP (Preparation)
(manufacture of, for battery electrodes, by electrolytic polymerization,
room-temperature molten-salt baths in)
IT 71-43-2, Benzene, uses and miscellaneous 1124-64-7 7446-70-0, Aluminum
chloride, uses and miscellaneous 65039-09-0
RL: USES (Uses)
(molten-salt bath containing, electropolymn. of aniline in, for battery
electrodes)
IT **25233-30-1P, Polyaniline**
RL: PREP (Preparation)
(manufacture of, for battery electrodes, by electrolytic polymerization,
room-temperature molten-salt baths in)
RN 25233-30-1 HCAPLUS
CN Benzenamine, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 62-53-3
CMF C6 H7 N



IT **65039-09-0**
RL: USES (Uses)
(molten-salt bath containing, electropolymn. of aniline in, for battery
electrodes)
RN 65039-09-0 HCAPLUS
CN 1H-Imidazolium, 1-ethyl-3-methyl-, chloride (9CI) (CA INDEX NAME)



● Cl⁻

ONE OR MORE TAUTOMERIC DOUBLE BONDS NOT DISPLAYED IN THE STRUCTURE

L57 ANSWER 31 OF 33 HCAPLUS COPYRIGHT 2006 ACS on STN
AN 1988:64669 HCAPLUS
DN 108:64669
TI Electrically conductive polymer films and electrode materials coated with

them
 IN Naarmann, Herbert
 PA BASF A.-G., Fed. Rep. Ger.
 SO Ger. Offen., 5 pp.
 CODEN: GWXXBX
 DT Patent
 LA German
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	DE 3609137	A1	19870924	DE 1986-3609137	19860319
	EP 241728	A1	19871021	EP 1987-103749	19870314

R: BE, DE, FR, GB, NL

PRAI DE 1986-3609137 A 19860319

AB Films containing elec. conductive polymers are formed by electrochem. polymerization of the monomers on flat **electrodes** in baths containing conductive salts. The films are used to coat **electrode** materials and and for antistatic finishing of plastics or for shielding electromagnetic waves. H₂O, pyrrole, lignin sulfate, and Na dodecylsulfate were combined and the solution was polymerized at 22° and c.d. 3 mA/cm² for 60 min. A **polypyrrole** film 100 µm thick with an elec. conductivity of 20 S/cm and a tear resistance of 40 N/mm² was obtained.

IC ICM C25B003-10

ICS C08F002-58; C08F002-44; C08L045-00; C09D005-24; H05K009-00;
 H05F001-02; G12B017-02; C25D013-08; H01B001-12

ICA C08F034-00; C08F032-00; H01L029-28; H01L023-48

CC 72-9 (Electrochemistry)

Section cross-reference(s): 38, 76

ST polymn electrochem elec conductive polymer; **polypyrrole** film
 elec conductive **electrode**

IT 9002-86-2P, PVC 9003-09-2P 9003-19-4P, Poly(vinyl ether) 9003-39-8P,
 Poly(vinyl pyrrolidone) 9004-67-5P, Cellulose methyl ether
 25232-42-2P, Poly(vinyl imidazole) 30604-81-0P,
Polypyrrole

RL: PREP (Preparation)

(elec. conductive films, electrochem. production of, for **electrodes**)

IT 25232-42-2P, Poly(vinyl imidazole) 30604-81-0P,
Polypyrrole

RL: PREP (Preparation)

(elec. conductive films, electrochem. production of, for **electrodes**)

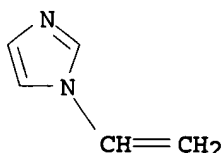
RN 25232-42-2 HCAPLUS

CN 1H-Imidazole, 1-ethenyl-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 1072-63-5

CMF C5 H6 N2



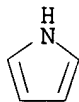
RN 30604-81-0 HCAPLUS

CN 1H-Pyrrole, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 109-97-7

CMF C4 H5 N



L57 ANSWER 32 OF 33 HCAPLUS COPYRIGHT 2006 ACS on STN

AN 1984:574739 HCAPLUS

DN 101:174739

TI Secondary batteries using room-temperature molten nonaqueous electrolytes containing 1,2,3-trialkylimidazolium halides or 1,3-dialkylimidazolium halides

IN Gifford, Paul R.; Shacklette, Lawrence W.; Toth, James E.; Wolf, James F.

PA Allied Corp., USA

SO U.S., 7 pp.

CODEN: USXXAM

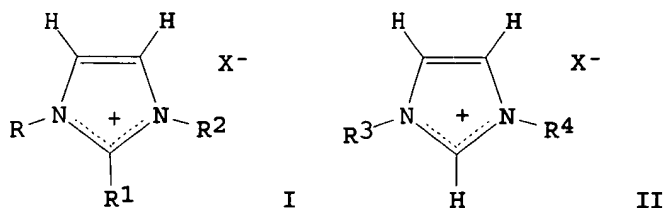
DT Patent

LA English

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 4463071	A	19840731	US 1983-556496	19831130
	GB 2150739	A1	19850703	GB 1984-29180	19841119
	GB 2150739	B2	19861001		
	DE 3443326	A1	19850605	DE 1984-3443326	19841128
	JP 60133670	A2	19850716	JP 1984-253961	19841130
PRAI	US 1983-556496	A	19831130		

GI



AB Batteries, and especially secondary batteries use conjugated backbone polymer anodes, alkali metal-transition metal chalcogenide cathodes, and a nonaq. molten electrolyte mixture of an Al halide and I and(or) II, where R, R1, R2, R3, and R4 are independently C1-12 alkyl groups and X is independently a halide, e.g., Cl- or Br-. In some instances an alkali metal and(or) tetraalkylammonium salt may also be incorporated into the electrolyte composition. The molar ratio of Al halide to I or II in the electrolyte can be varied over a wide range to make the electrolyte basic or neutral and, as such, useful in batteries with the above-mentioned **electrodes**, such as LixWO2 or LixCoO2 cathodes. Thus, a LiCoO2-**polyacetylene** battery with an electrolyte mixture of 1,2-dimethyl-3-ethylimidazolium

chloride [92507-97-6], AlCl_3 , and LiCl was prepared, and its performance is reported.

IC H01M006-14

INCL 429194000

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 38, 72

IT 25067-58-7

RL: USES (Uses)

(electrodes, in battery with molten aluminum
chloride-trialkylimidazolium chloride electrolyte)

IT 25067-58-7

RL: USES (Uses)

(electrodes, in battery with molten aluminum
chloride-trialkylimidazolium chloride electrolyte)

RN 25067-58-7 HCAPLUS

CN Ethyne, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 74-86-2

CMF C2 H2

$\text{HC}\equiv\text{CH}$

L57 ANSWER 33 OF 33 HCAPLUS COPYRIGHT 2006 ACS on STN

AN 1980:527553 HCAPLUS

DN 93:127553

TI Electrochemical oxidation of nucleic acid and proteins at a graphite
electrode. Qualitative aspects

AU Brabec, Viktor

CS Inst. Biophys., Czech. Acad. Sci., Brno, 612 65, Czech.

SO Bioelectrochemistry and Bioenergetics (1980), 7(1), 69-82

CODEN: BEBEBP; ISSN: 0302-4598

DT Journal

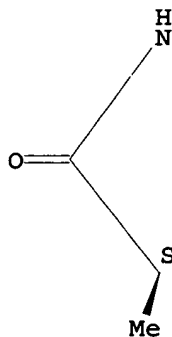
LA English

AB The electrochem. oxidation of DNAs differing in their guanine-plus-cytosine (G+C) contents at a pyrolytic graphite electrode was investigated by differential pulse (DP) voltammetry. At pH 6.4 all samples of DNA studied yielded a peak G on DP voltammograms corresponding to the oxidation of guanine residues, and a peak A corresponding to the oxidation of adenine residues. The potentials of peaks G and A were not influenced by the G+C content in DNA and differed by 0.28 V. The ratio of the heights of peaks A and G was identical with great accuracy to the ratio of the contents of adenine plus thymine and G+C. This was exploited for developing a new method for the determination of the G+C content in DNA. The electrochem. oxidation of proteins at a spectroscopic graphite electrode impregnated with paraffin wax (WISGE) was studied by linear sweep, cyclic, and DP voltammetry. Proteins were electrochem. oxidizable at the WISGE. They yielded a faradic peak on voltammograms in the vicinity of 0.7-0.8 V in a neutral medium. The voltammetric study of proteins, poly(amino acids), peptides of known amino acid composition, and free amino acids revealed that the irreversible electrooxidn. of tyrosine (and, contingently, of tryptophan) residues is responsible for the appearance of the protein peak at the WISGE. DP voltammetry at a graphite electrode might become another electrochem. method suitable for studies of conformational changes of proteins, and in particular of those not containing cystine or cysteine (e.g. histones).

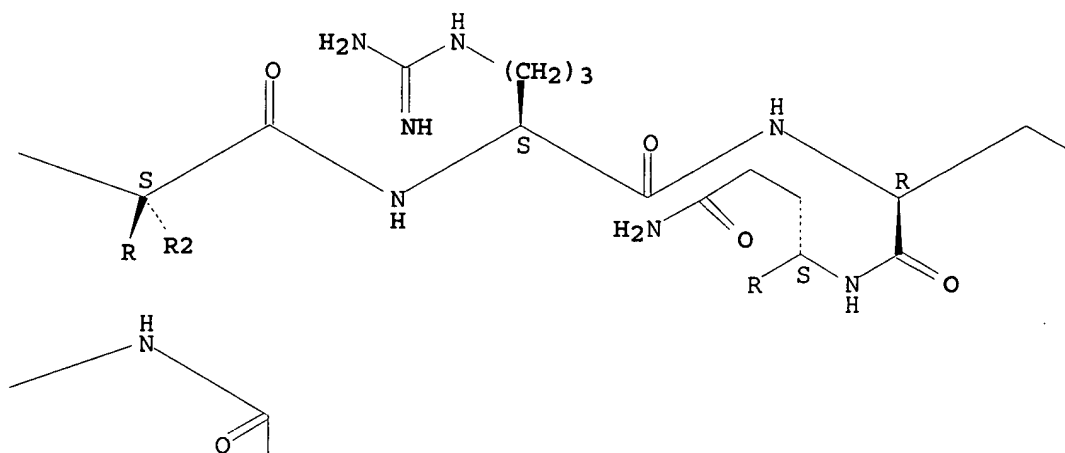
CC 6-13 (General Biochemistry)
Section cross-reference(s): 9
IT 9001-63-2 9001-99-4 9004-10-8, reactions 24345-16-2
25619-78-7 25667-16-7 74836-97-8
RL: RCT (Reactant); RACT (Reactant or reagent)
(electrochem. oxidation of, at graphite electrode impregnated
with paraffin wax)
IT 24345-16-2 74836-97-8
RL: RCT (Reactant); RACT (Reactant or reagent)
(electrochem. oxidation of, at graphite electrode impregnated
with paraffin wax)
RN 24345-16-2 HCAPLUS
CN Apamin (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.

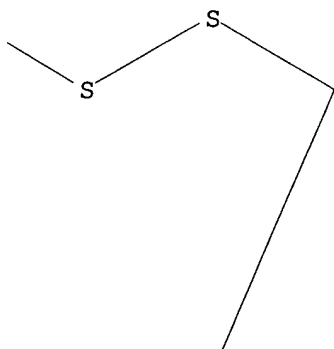
PAGE 1-A



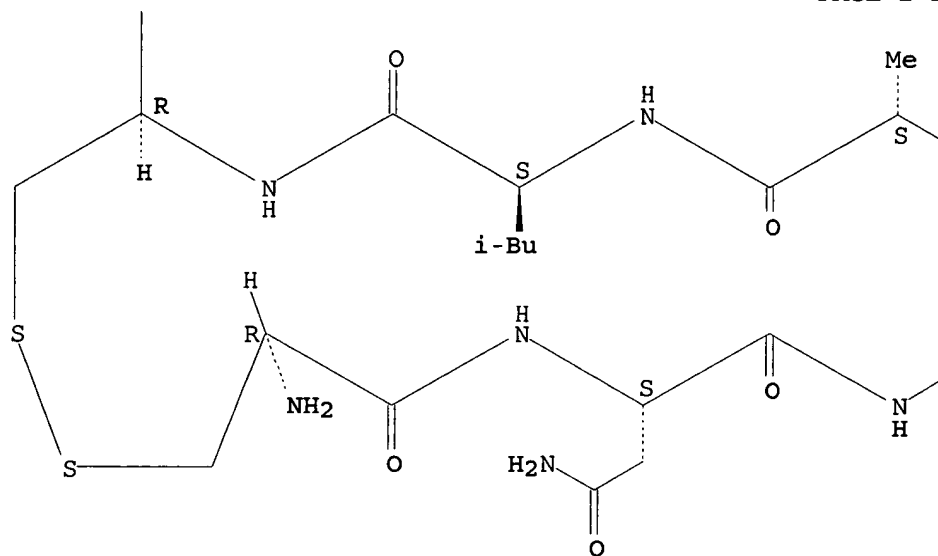
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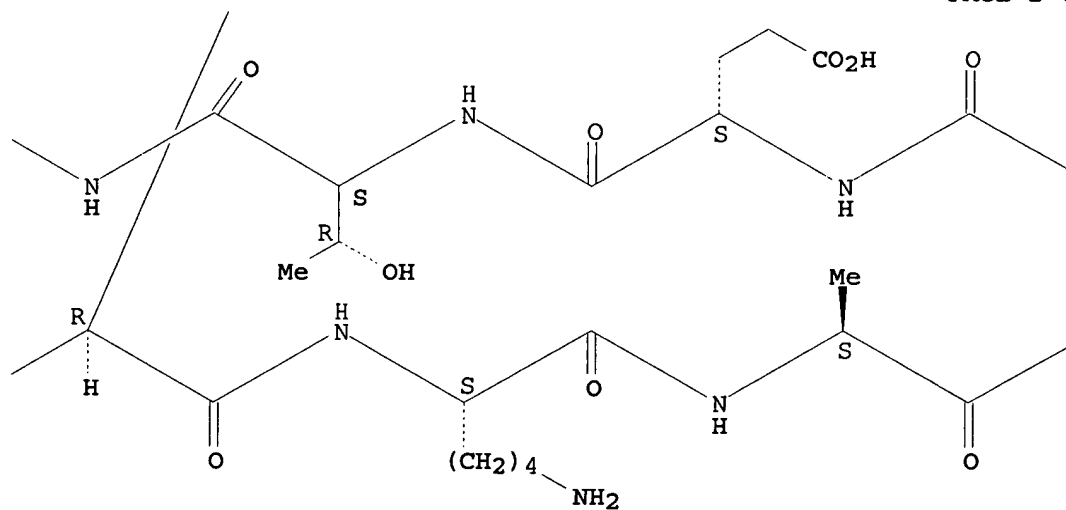
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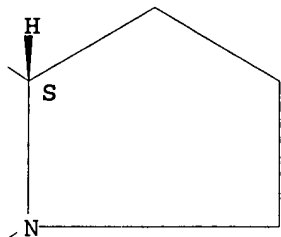
PAGE 2-B



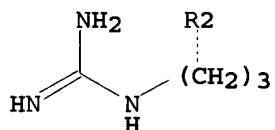
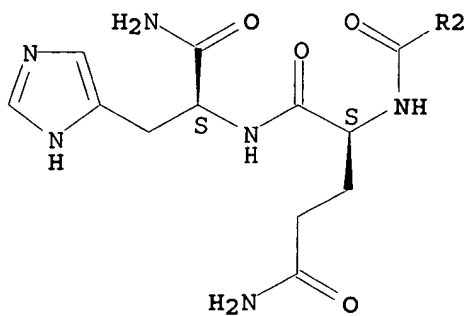
PAGE 2 - C



PAGE 2-D



PAGE 3-A

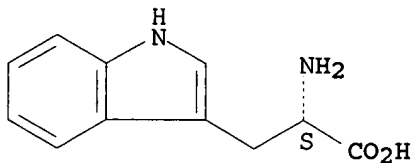


RN 74836-97-8 HCAPLUS
 CN L-Tryptophan, polymer with L-tyrosine (9CI) (CA INDEX NAME)

CM 1

CRN 73-22-3
 CMF C11 H12 N2 O2

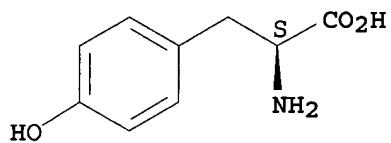
Absolute stereochemistry.



CM 2

CRN 60-18-4
CMF C9 H11 N O3

Absolute stereochemistry. Rotation (-).



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